

HENRY E. SIGERIST
ON THE
SOCIOLOGY OF MEDICINE



HENRY E.
SIGERIST
ON THE
SOCIOLOGY
OF MEDICINE

EDITED BY
MILTON I. ROEMER, M.D.

DIRECTOR OF RESEARCH, SLOAN INSTITUTE OF
HOSPITAL ADMINISTRATION, CORNELL UNIVERSITY

FOREWORD BY
JAMES M. MACKINTOSH, M.D.
FORMERLY DEAN, UNIVERSITY OF LONDON SCHOOL
OF HYGIENE AND TROPICAL MEDICINE, DIRECTOR,
DIVISION OF EDUCATION AND TRAINING SERVICE,
WORLD HEALTH ORGANIZATION

MD PUBLICATIONS, INC.: NEW YORK

LIBRARY OF CONGRESS CATALOG CARD NUMBER 60 6647

© COPYRIGHT 1960 BY MD PUBLICATIONS, INC
NEW YORK, NEW YORK

© Copyright under the International Copyright Union All rights reserved
This book is protected by copyright No part of it may be duplicated
or reproduced in any manner without written permission from the publisher
Printed in the United States of America

TABLE OF CONTENTS

FOREWORD: Henry E. Sigerist: Medical Sociologist	vii
PREFACE	xi

I. GENERAL ESSAYS

The Physician and His Environment	3
The Special Position of the Sick	9
Trends Towards Socialized Medicine	23
The Medical Student and the Social Problems Confronting Medicine Today	28
Socialized Medicine	39
An Introduction to the Economics of Medicine	54
The Place of the Physician in Modern Society	65

II. EUROPE

Current Unrest in the Medical World	77
Yugoslavia and the Eleventh International Congress of the History of Medicine	89
From Bismarck to Beveridge: Developments and Trends in Social Security Legislation	118
Twenty-five Years of Health Work in the Soviet Union	139

III AMERICA

Medical Societies Past and Present	157
The Cost of Illness to the City of New Orleans in 1850	169
The Realities of Socialized Medicine	180
Group Health Plans in the United States	197
Saskatchewan Health Services Survey Commission	209
Medical Care for All the People	229
Towards a Renaissance of the American Spa	248

IV OTHER LANDS

Leprosy in the Hawaiian Islands	259
Socialized Medicine Abroad	261
A Physician's Impression of South Africa	267
The Need for an Institute of the History of Medicine in India	273
Report on India	288

V SPECIAL TOPICS

Problems of Historical Geographical Pathology	299
The History of Medical Licensure	308
An Outline of the Development of the Hospital	319
Developments and Trends in Dentistry	327
War and Medicine	337
Nationalism and Internationalism in Medicine	348
Remarks on Social Medicine in Medical Education	360
What Medicine Has Contributed to the Progress of Civilization	369

FOREWORD

HENRY E. SIGERIST: MEDICAL SOCIOLOGIST

MOST individuals who take up history as an interest or a profession think of the subject in terms of the past. Events have happened; the emotional content that introduced bias to distort the facts and the hurried, partial interpretation of what took place have lost their energy and thrust. The time has come to consider the evidence in the calm atmosphere of the study and the library, and on that evidence to arrive at a balanced judgment. The historian's task is complicated by conflicts of opinion, lack of trustworthy testimony, and also by the vagaries of his own outlook. The ultimate value of his work must depend on a large number of personal factors, which we may describe as his philosophy, and on that distillation of experience properly called wisdom. The historical scholar writes as a rule with a sense of finality, no doubt pointing out error and assessing the truth as he sees it, but he turns the page and closes the account.

One of the remarkable features of Sigerist was that, in spite of his extensive knowledge of the languages of past and present, he was yet able to look beyond the records of man and study his aims and motives, to describe them in terms of the present, and to look forward with a clear vision to their effects on human society. It was not enough for him, however, to delineate future trends with the hand of a historical artist.

He was ready and anxious to play his part in shaping that future both in his writings and by taking a personal role in public affairs. His chosen field of activity was medicine, and so Sigerist was primarily a medical sociologist, but he went farther than that by deliberately translating social theory into social action. He was so constituted that he could not stand aside and watch, although that was the easier part in a time of acute medicosocial controversy.

Apart from his essays, Sigerist's main contribution to medical sociology was derived from his teaching, both in the university and on the public platform. His gift of exposition gave his hearers a broad understanding of the social functions of the physician and at the same time a clear view in perspective of the evolution of social medicine in various countries. He took a keen interest in watching and tending the growth of health services on a national scale and in picking out the best features in his comparative assessments of Germany, the U.S.S.R., the United Kingdom, and the competing programs in the United States and Canada. In both speaking and writing, however, his emphasis lay upon practical medicine—the effect of planning on the health and well-being of the people. He earnestly supported the plea that Acland had made many years earlier, "that the complicated condition of human society, with its pressing needs, demands such extended estimate of the Physician's functions as to include not only the treatment but the prevention of disease in individuals, in families, and in communities, and the difficult problems of Comparative National Health."¹

It was no chance historical exercise that led Sigerist to pay such close attention to J. P. Frank's insistence on "the necessity of removing or of making more tolerable the richest source of disease—the extreme poverty of the people." It was a deep personal conviction that drew him towards Pettenkofer's intensely practical service to environmental health.² But it should not be thought that Sigerist's devotion to the sociology of medicine rested solely, or even chiefly, on the historical approach. Much of his work from 1930 onwards was in the sphere of current topics such as "The Trend Toward Socialized Medicine," in 1934, and "The Realities of Socialized Medicine"—his early essay on the movement in the United States as represented by the Wagner Health Bill of 1939.

There is no doubt that Sigerist intended to write a book, perhaps of

¹ Henry Acland, *Letters to a Colleague*, 1889.

² Max von Pettenkofer, *The Value of Health to a City*, translated by Henry E. Sigerist, Baltimore, The Johns Hopkins Press, 1941.

several volumes on medical sociology, and as late as 1953 he contemplated the publication of collected essays on this subject. Although these projects did not reach fulfillment, much abides. Happily, there is a treasure store of his sociological writings and we owe a debt to Dr Milton Roemer for his fine and significant selection from this group.

As the years passed, and especially after the end of World War II, the essays on medical sociology became more contemplative and less colored with a sense of urgency. The address on *The Place of the Physician in Modern Society* sets the theme for a philosophical approach.

From a private relationship between two individuals, medicine is rapidly becoming a social institution. It is one link in a great chain of social welfare institutions. Medicine usually regarded as a natural science, actually is a social science because its goal is social. Its primary target must be to keep individuals adjusted to their environment as useful members of society or to readjust them when they have dropped out as a result of illness. In combatting disease the physician uses methods of the natural sciences every day but to a social end [1946].

One feels nevertheless on rereading many of the later papers that their author still has his eyes on the future and that, to him,

all experience is an arch where thro
Gleams that untravell'd world

In his later papers Sigerist turned his keen mind more to medicine as the central figure in the pattern of his thinking and the sociological approach became one of the many ways leading to that center. The essay on *What Medicine has Contributed to the Progress of Civilization* represents the mature conclusions of a physician.

This leads us into the field of sociology from which medicine has received much information but to which it is contributing more and more as it develops into a social science [1955].

It is evident here that medicine is the pre-eminent giver. Another great pioneer in social medicine, John Ryle, wrote in the closing days of his life that his ambition had been to help in bridging the gap between medicine and the social environment of man. Sigerist was another bridge builder, and he said:

Medicine must of necessity become preventive medicine. There is no point in letting people break down and suffer from preventable diseases. There are enough sources of suffering in the world that may not be prevented so easily. The major tasks of medicine will be the maintenance and promotion of health, the prevention of disease, healing when prevention has broken down and finally the social reha-

bilitation or reintegration of the former patient into society. The doctor's place will no longer be in his office where he would sit waiting for patients, it will be in the factory, the mine, the farm, the ship, wherever people convene for work. His headquarters will be the health center. Such a program obviously requires the close cooperation of the physician with educators, physical culturists, social workers, administrators, and statesmen. The relation between medicine and sociology will be a very close one.

In his own sphere none has been more constructive than Sigerist, or exercised a greater influence on the keen thinkers of the rising generation.

JAMES M. MACKINTOSH, M.D.

Geneva, Switzerland
October 5, 1959

PREFACE

IN the selection of these essays by Henry E. Sigerist on the sociology of medicine, the editor was confronted with an embarrassment of riches; there were hundreds to choose from, and the alternative choices were always rich.

From Sigerist's abundant writings, thirty-one essays have been assembled. They span a quarter of a century, from 1931 to 1955. Twenty-eight of these have been previously published, but two are from manuscripts found among the Sigerist papers, and one is derived from an unpublished document submitted to the World Health Organization. The great majority were published in English and appeared first in the United States. Two of the English essays, however, were published first in Canada, and one in India. Four essays were published first in Europe, of which three have been translated from the German and one from French.

In 1946, twelve of Sigerist's best essays on educational philosophy were brought together in *The University at the Crossroads*. Another collection of his essays appears as a companion volume to this one: *Henry E. Sigerist on the History of Medicine*. Many of these essays dealt with the sociology of medicine, but none of them is duplicated in this volume. Nor are there excerpts from any of Sigerist's other books. The objective was to make available the principal Sigerist papers on medical sociology not to be found elsewhere in book form.

But what is the sociology of medicine on which these essays are written? As Sigerist used the term, its meaning was quite specific and

yet quite different from that of American sociologists now working in this field. To Sigerist, medical sociology meant the current patterns and problems of medical care in different countries. The emphasis was on contemporary issues and methods of health service organization. He encompassed past conditions under medical history.

Sigerist planned a four volume *Sociology of Medicine* that was to have been done when he finished his eight volume *History of Medicine*. We do not know exactly how he would have treated the subject, had he lived to do it, but a fragment found among his papers reads:

Sociology of Medicine: General Plan

1. Medicine as a Social Science
2. Health Insurance
3. State Medicine
4. Problems of Various Countries

A better idea can be gathered by reading the essays in this volume. Obviously no sharp line can be drawn between Sigerist's medical history and his medical sociology. All his historical writings are certainly sociological in that they view developments against the social background at different times and places. And the essays here, although primarily sociological, invariably treat their subjects with historical perspective. Some of the papers in this volume are, indeed, preponderantly historical, but they have been included because they explore subjects with a special significance to the contemporary world of medical care organization.

Modern social scientists put great stress on carefully observed and quantified phenomena. Dr. Sigerist, on the other hand, took the broad view of social developments, and, without seeking measurements of minutiae, he saw relationships and drew conclusions. Of course, he treated quantitative data with the greatest respect and used it when it was available. His special genius, however, was not as an analyst of detail but as a synthesist who pieced together innumerable bits of evidence to get at the essence of medical-social developments and to predict future trends.

To readers today, therefore, much of what Sigerist wrote will seem rather obvious. But when he said these things they were not at all obvious, indeed, they were sometimes considered highly contentious. Much that Sigerist proposed in the past as idealistic goals for medicine's future has now come to pass or is clearly in view.

Sigerist always described himself as an optimist, meaning that he believed society would eventually solve its problems of disease, war, and

poverty through improved social organization. He saw these social plans in a certain noble simplicity and repeated his advocacy of them at every opportunity. His outline of an ideal scheme of medical care organization is repeated in several contexts in this collection of essays. Although the editor was sometimes tempted to eliminate these repetitions, he thought it better to have each essay stand in its entirety.

Despite his vast scholarship, Dr. Sigerist was a man of action who wrote in a way designed to motivate and inspire. He missed no occasion to draw lessons from history that would serve as guides to action today. To do this, he made sweeping observations that epitomized vast historical periods or complex contemporary problems in a few lines. He gave meaning and excitement to the medical-social findings of others and supplemented them with facts gathered by himself, mostly from first-hand observations throughout the world.

Because Dr. Sigerist considered the sociology of medicine to mean the social aspects of medical care in different countries, the essays in this volume have been assembled mainly along geographical lines. His observations and commentaries on medicine in Europe, America, and other continents have been classified that way. But, cutting across the medicine of all countries, Sigerist has left us certain general philosophical concepts, with which these essays begin, and reviews of special medical-social topics, with which they conclude.

Grateful acknowledgment is extended to several persons who assisted in the preparation of this volume—to Nora Sigerist Beeson, Erica Sigerist, Owsei Temkin, Genevieve Miller, Leslie Falk, George Silver, and Félix Martí-Ibáñez. Their help in assembling a complete bibliography of Dr. Sigerist's writings, in translating some of them, and in offering suggestions was invaluable, but the responsibility for the final selection must rest with the editor.

For old students and friends of Henry E. Sigerist, it is hoped that this collection may provide happy reminders of ideas which have now become part of the thinking of thousands. For those who, through this volume, discover Sigerist for the first time, it is hoped that these essays in medical sociology may whet the appetite for fuller reading of his works.

MILTON I. ROEMER, M.D.

Ithaca, New York
October 5, 1959



GENERAL ESSAYS

make a pact, become companions. They go along the road of life together for a while, with one partner in the lead, steering toward a definite goal, toward health. Because of its nature, this relationship is basically an intimate one. No person and no authority must interfere. The physician and his patient are, to use a phrase of Schweningen, "as on a lonely island."

Thus the environment of these two people is first of all nature, in which they are rooted. Nature determines the rhythm of our life. Day and night alternate eternally, and we follow this rhythm in waking and sleeping, in work and rest. Our relationship with nature is ever changing; we take substances and energy from her to keep alive. We perform work, and on the other hand give to nature substances and energy.

Wir sind von ihr umgeben und umschlungen—unvermögend, aus ihr herauszutreten und unvermögend, tiefer in sie hineinzukommen. Ungebeten und ungewartet nimmt sie uns in den Kreislauf ihres Tanzes auf und treibt sich mit uns fort, bis wir ermüdet sind und ihrem Arme entfallen. (We are surrounded and embraced by her—powerless to step away from her and powerless to penetrate into her more deeply. Unasked and unwarned, she picks us up in the whirl of her dance and drives us along until we get tired and drop from her arms)—*Goethe*.

We are part of nature with the miraculous mechanism of our organism, which fits in as part of a whole. And we are part of her with our minds, which free us from our environment and make it our universe, our minds which let us recognize the evil powers of nature, let us avoid them, even let us seize and direct them so that they are not destructive but perpetuating.

An eternal struggle takes place in nature, in which the stronger inexorably remains the victor. We are permanently set into the cycle of life and death. We destroy uncounted living things in order to preserve our own life. But we pay our tribute: we return to earth, and we ourselves serve to build new organisms. With all the villi of our alimentary tracts we are rooted in the earth. From it we take our food, which we burn, which we convert into living matter. But we strive for the sun. We walk with head erect. Our chests expand to take in air, *pneuma*, which was thought to contain a vital principle. Food no longer falls into our laps. We have to earn it with hard labor, and labor has brought a new rhythm into our lives.

In these three spheres—the spheres of nutrition, the atmosphere, and the way of life—lurk most causes of disease. Too much, too little, something different, can provoke disease. Our organism, it is true, is capable

of far-reaching adjustment to the fluctuations of the environment, but there is a limit to it. And only too often we are not in full possession of our defense mechanisms as nature determined them, but, through the power of heredity, we have to atone for the sins of our ancestors.

The human spirit, in a slow tenacious struggle, has discovered many of nature's secrets, and she has lost much of her terror. To primitive man the most common things, a stone by the wayside, a tree at the end of the village, were often objects of horror, the seat of supernatural powers. We know the structure of the stone and the laws that move it. We know the life of the tree. We have acquired power over them through this knowledge and no longer fear them. We have increased the fertility of the soil. We direct the healing power of nature. We have coerced the elements into our service. We have learned to administer the very physical and chemical forces that make man ill in such a way that they are beneficial to him. Poison becomes a remedy; the knife which inflicts wounds heals wounds. Heat and cold, the rays of the sun, and the rays of individual elements become healing powers in our hands. But the searching mind has penetrated further yet. It has tried to discover not only man's environment but also his inner world, not only the macrocosm but also the microcosm. Man has tried to understand the process by which the organism defends itself against harmful influences. And with a ruling hand he makes these mechanisms function artificially. He makes man artificially ill in order to protect him from the same disease. He breeds defensive forces in order to put them at the disposal of the organism when needed. He penetrates further yet. He calls to the attention of the body the chances which it missed. He brings about the healing hyperemia, the healing fever, which the organism was unable to produce on its own. He activates the defense forces in order to make a chronic process acute. In this manner physical, chemical, and biological forces of utmost efficacy are freely at the disposal of the physician.

ceiving and giving, suffering and dominating, in the isolation of their pact. But with advancing culture men banded together in ever larger social units. The struggle for the daily bread, the struggle for acceptance, became easier when not carried out alone, when companions were at hand who followed a common aim. The crowding together of many people called for standards. Regulations were set up which the individual had to observe so as not to endanger communal life. Each one had to give up a part of his individual life, had to renounce the fulfillment of many wishes to subordinate himself to the larger whole. Man, a member of nature, now also became a member of society.

It is obvious that these developments of society would raise some problems of health and disease, that the relationship between the doctor and his patient would undergo some changes. The island on which they both originally found themselves expands into a continent, a thickly populated continent. No longer does nature alone form the environment of the physician and the patient. Society too becomes an environment which produces manifold relationships.

The manner in which society evaluates his condition is not without interest to the sick man. It is a sign of growing culture that the sick man is not simply abandoned as a peculiar kind of person who radiates weird powers, as was the case at times among primitive man. The sick human being is looked after, but with varied feelings. In Babylonian-Judaic culture, suffering is most often punishment. Through suffering the patient atones for a sin, his own sin or that of his fathers. For the Greek world, health is the highest possession. Only healthy man is a complete human being. Disease removes him from the state of perfection, makes him inferior. Society is interested in the patient inasmuch as his condition is curable. Incurables, cripples, sickly children were abandoned. A far-reaching change in the condition of the sick man was first introduced by Christianity, delivering him from the odium which heretofore had hovered over him. Disease, suffering in general, is grace, means purification. Pathos is transformed into ethos. The patient is privileged and assumes a special position in society. He has a right to help from his fellow men. In the western world the patient has maintained this position elaborated by Christianity. From that time on, society has considered it a duty to care for the sick. It has given him medical care and medical help, even when he had no means whatsoever, and granted him a number of privileges.

Just as the individual tries to protect himself from disease, society

attempts to preserve itself from disease. The individual seeks protection in living a healthful life, in strengthening his organism to arm it against shock. The state protects its members by providing them with healthful living conditions. Society is especially threatened where people are crowded together, where harm strikes whole groups of people simultaneously. Sanitation of towns, therefore, has been one of the most important public-health problems of the state since early antiquity. Even today the foundations of ancient cities or the impressive remnants of imposing aqueducts testify to the great achievements in this field.

Through public-health measures the state thus attempted to protect the individual from ill effects brought about by social living. But when the individual fell ill physicians and hospitals were at his disposal. Until late in the nineteenth century, public care was limited to these two functions. The development of society, however, brought with it new problems. Work in industry created new sources of danger, and public health had to expand considerably. More and more the world became a world of labor, in which each individual has his place like a cog in a watch. Only those who have the will to work, who are ready to contribute their share to the solution of common problems, are full fledged members of the community. In today's world there is no room for parasitism, as ancient and Oriental cultures knew it. The fact that, in time of economic crisis, parts of the population become unemployed does not, of course, alter this concept.

not an end but a means. In fighting disease, we free man from his shackles and we enable him to fulfill his mission unhindered, to create values.

The development of society has necessarily deeply affected the position of the physician. No longer does he stand apart, only loosely connected with his peers. Ever since the legislation of Frederick II of Hohenstaufen in the thirteenth century, the state has intervened more and more in the medical sphere, has set up more and more standards which control the physician's actions. The more medical problems were taken up by governments, the more the physician was consulted as an expert. Indeed this was carried far beyond medical matters into the fields of education and of jurisprudence. A large number of physicians were drawn directly into state service as officials. At the same time, the patient's economic relationships with the sickness insurance funds have made the majority of doctors dependent upon social agencies. The physician's profession is independent only in name. Much that once seemed valuable to us is gone forever. But there is no reason for pessimism. Never before did such a large field of action lie before us, such vast possibilities of action. Never until today has the physician been consulted so frequently and for such diversified requests. Today, if ever, the physician can become a statesman, Plato's *Asklepios politicos*.

How the development will continue, whether it will progress in a straight line in the path marked out or whether upheavals will give it another direction, we do not know. But come what may the basic phenomena of health and disease will remain unchanged. No matter how overpopulated the continent may be in which we live, every doctor's office, whether in a private house or an office building, will become a peaceful island where he meets his patient. As always it will be our mission to dry tears and give aid—provided every one of us keeps in mind the passage from the Hippocratic oath: "With purity and holiness I will pass my life and practice my art."

THE SPECIAL POSITION OF THE SICK



A SICK person occupies an admittedly exceptional position in society. At present, the work of the physician consists of the task of restoring to bodily health anyone afflicted with illness. This consists of treatment of the sick in such a way that all the parts of his body regain the form and function which they had before his illness. This restoration to health (*restitutio ad integrum*) is so much the desired goal that a doctor may consider his task completed when he succeeds in taking the sick man from his special position and restoring him to a useful place in society. A scar, deformities, a missing appendix, the aftereffects of a cured ailment do not matter, as long as they do not lastingly injure a man in his ability to work and to find pleasure.

This paper is one of Dr. Sigerist's earliest sweeping historical reviews of medicine in its social context. It was written in 1929 soon after Sigerist became Director of the Institute of the History of Medicine at the University of Leipzig, Germany. In it is found the original formulation of concepts about the changing position of the sick person within a changing society which appear again and again in his later writings. As in most of Sigerist's memorable essays, its great contribution lies not in its details but in its large generalized conception. The paper was published in German under the title "Die Sonderstellung des Kranken" in *Jahrbuch des Instituts für Geschichte der Medizin in der Universität Leipzig* 2:11-20, 1929. It was translated from the German by Rowena Connell.

Pathology distinguishes between a disease and a diseased condition.¹ The latter will be the concern of medical practice in many cases, but in many others it will not be the subject of treatment. A skin scar is a diseased condition in the pathological sense, for the skin in the scarred area is altered in its form and in its function. As a rule, this condition is of no consequence to the afflicted person. However, let us say that it is a large scar on the face of an actor. In that event he may assume the exceptional position which distinguishes the diseased man because of the scar and thus come to seek the aid of a physician.

The exceptional position which the diseased person holds in today's society has come about through a very complex development over a period of thousands of years. This status as it exists today can only be understood through historical analysis.

A man awakes one morning and feels different from what he did before. Although he is accustomed to begin his daily work with a series of simple tasks, when he has completed these almost automatic actions he finds that on this particular day they seem difficult. His head aches; his throat is raw. He is cold and feels wretched. A second man has completed his usual day's work. As long as he was sustained by the tension of the work everything was all right. He goes home, tries to rest, and cannot. Discomfort, which has been standing menacingly in the background all day, suddenly overcomes him. Again, another man discovers an alteration in his skin—a rash, a swelling that was not present before. A fourth man lives four flights up. For years he has climbed these steps easily, and one day he notices how many there are. It is difficult for him to climb them and he becomes short of breath. On still another occasion, a man may be suddenly seized and shaken with a chill in the midst of his work. Another may be stricken with a sudden sharp pain and collapse. Yet another may be stricken with sudden violence or an accident in the course of his daily life and be seriously injured.

What has happened in all these cases? A man has become ill. And what does the fact of this illness mean to him?

To begin with, the fact of illness means an interruption in the rhythm of his life. We all live in a specific rhythm, determined by nature, culture, and habit. Day and night alternate in an unending ebb and flow, and we ourselves conform to this rhythm with waking and sleeping, with work and rest. The custom of a weekly day of rest, which we derive from the East, has brought a definite pattern into our lives. The be-

¹ R. Rösle, in L. Aschoff, *Pathologische Anatomie*, ed. 7, Jena, 1928, vol. 1, p. 8.

ginning and the end of daily work, the hours of meals, all these make up the rhythm of our lives, which vibrates in a different tempo for city dweller, for farmer, for factory worker, for white-collar worker.²

An undisturbed rhythm means health. A change in the rhythm, perhaps when a farmer moves into the city and starts a city job, means a risk to health and produces altered conditions of illness and treatment.³

Disease, then, strikes abruptly into this structure. It throws us off our accustomed track. It breaks the rhythm of our existence sharply. Night comes, and other men sleep. But sleep eludes the sick man. Mealtime arrives, but the stomach of the sick person refuses food altogether or makes strange demands at odd hours. The sick man, therefore, lives differently from the rest of society—from the healthy. In short, sickness isolates.

To be ill means to suffer—to suffer in a twofold sense. To suffer means to be passive. The sick man is cut off from the active life to the extent that he is even unable to procure his own food.⁴ He is literally helpless and is assigned to the care of other persons.

But to suffer also means to feel discomfort. Every disease has a certain amount of discomfort connected with it, which varies in intensity from individual to individual and from disease to disease. This discomfort is termed pain. Pain presupposes an organic unity and means that this unity has been broken. Through pain we become conscious of our bodily organs. Their proper functioning, to which we are accustomed, does not take place. Pain is a cry of alarm which tells us that in some specific part of our bodies a struggle is taking place. Pain is a mobilization order for the defenses of the body.⁵

Pain sometimes becomes fear—even that greatest of all fears, the fear of death. Every serious illness is a reminder of death (*memento mori*). Disease breaks the rhythm of life and places a boundary to human existence. We feel that our life on earth is transitory. This feeling is

² The pervasive influence of daily employment in producing a rhythm in life is a modern phenomenon of western culture, which, for example, is unknown in the East, where, as a consequence, pathology takes a somewhat different form.

³ Charles Widmer, "Vom Rhythmus der Gesundheit und vom Standort des Menschen," *Therapie der Gegenwart*, H.11, 1915.

⁴ A paronychia still does not mean inactivity for the entire person of the sufferer, but it certainly does mean that the affected part of the body is useless for practical purposes.

⁵ Concerning pain, see Max Scheler, "Vom Sinn des Leides" in *Schriften zur Soziologie und Weltanschauungslehre*, Moralia, Leipzig, 1923. Compare Weizsäcker, "Die Schmerzen," *Die Kreatur*, vol. I, 1926-1927, p. 315 ff.

aroused by many experiences, by the fading of nature in autumn or by the glimpsed immensity of the heavens on a clear summer night. Disease likewise forces us to recognize the place of destiny in our lives.⁶ It activates our spiritual sensitivity. It directs our gaze towards the eternal.

But, to return, we must consider the position of the diseased person in the individual cultures which have contributed to the structure of western civilization.

However, first a brief look at the special status of the sick among very primitive peoples.

§

Van Dongen, Volz,⁷ and others have taught us about a culture which has produced no sort of skilled medical practice, the Kubu of Sumatra. These are a generally intelligent people who carry on a difficult way of life in the primeval forest close to nature. Skin diseases and injuries to the skin occur frequently among them—so often that they do not find such conditions at all abnormal. The person suffering from such a disease is not considered a sick man among the Kubu. He lives as do the rest of his fellow tribesmen. It is a different matter with a serious illness, especially an illness accompanied by a fever. Perhaps a pox epidemic descends upon the countryside. The sufferer from such illness can no longer take part in the life of the tribe. Sickness isolates him so completely that he is left helpless and in pain, even by his relatives. He is shunned, as death is shunned.

Here we have the primitive attitude. The instinct for self-preservation on the part of the healthy is all powerful. The healthy man feels no social responsibility for the sick. Danger threatens from sickness as it does from death. Consequently, sickness is shunned. The attitude of the primitive man, therefore, marks the special status of the sick as one of complete isolation. The sick man is dead to society even before his physical death.

The Kubu native does not seek a cause for illness. He simply cuts off from society any person whom disease strikes. However, among primitive cultures which have reached a higher stage of development, one

⁶ Hans Much, "Das Wesen der Heilkunde," *Grundlagen zu einer Philosophie der Medizin*, Darmstadt, 1928

⁷ A. W. Nieuwenhuis, "Die Anfänge der Medizin unter den niedrigst entwickelten Völkern und ihre psychologische Bedeutung," *Janus*, 1924, p. 42 ff., for the best bibliography on the subject.

finds a strong urge to find cause and effect relationships.⁸ The sick man is a human being of a special type. His condition has a specific cause. He is ill, i.e., he has trouble and cannot live as other men do, because something has in some manner bewitched him. Another human being has cursed him with some sort of spell because he is an enemy or because the bewitched man has taken something belonging to the other man. Or perhaps it is something nonhuman which has done the evil: perhaps some god or spirit is displeased with the sick man. The sick man is therefore a victim. He has, on this account, a claim to the special attention and help of his fellow men. They try to discover the culprit. If he be another human being, they try to counteract his magic or punish him. If he be a god or demon, they try to placate him or exorcise him. The place of the sick man is understood in this kind of culture to be a magicoreligious one. Prescribed actions must be performed in order to restore the sick man to the favor of the human witch or the nonhuman spirits. The diseased man is a victim of powerful and secret forces, which it is the task of the witch doctor to know and control. Thus he is shaman, priest, sorcerer, and physician rolled into one.

On a higher level, namely, in the Semitic culture group, there exists the attitude that the sick man is not an innocent victim but rather that he has deserved his suffering because of his wickedness. Sickness is punishment for sin. It is not the vengeance or spite of another human being or the blind ill will of some demon. Sickness is given by the just God who is angry because of an outrage committed by the afflicted person. This view is specifically expressed in Babylonian medicine, which is to be sure, nothing more than a primitive medicine of powerful proportions with all the characteristic features of that genre.

This attitude is found in a most emotional manner in the lamentation addressed to Nergal, the god of plague.⁹

Powerful lord exalted one the first born of Nunamir,
First among the gods after Anunaki god of war
Descendent of Kutuschar the great queen
O Nergal thou mighty one among the gods beloved of Ninemenna

Bright art thou in the clear heavens high is thy throne
Great art thou in the world beneath thou hast no rival
In the council of the gods thy word is in regard after that of Ea
Thou seest all things from the heavens from thy place beside Sin

⁸ H. Lévy Bruhl *La mentalité primitive*, Paris 1922

⁹ Arthur Ungnad *Die Religion der Babylonier und Assyrier*, Jena 1921 p. 223

provision for the care of the crippled. A sick man must become well again in order to count again as a worth-while person.

The physician is to help him to this end, and through the skill of the physician the state gives him aid. Nevertheless, if the position of the diseased man be hopeless, if the disease is incurable, then the physician's skill is useless for himself and for the patient, since the object desired by society, namely, health, is not to be attained.¹⁵ In Greek society there remains a certain stigma attached to the sick man. It is not, to be sure, the stigma of sinfulness but rather the stigma of being less worthy.

Stoicism sought to go beyond this classic Greek position, in that it understood health and sickness as two sides of the same coin, as two things of equal worth. Only virtue was a genuine good. Vice was the only genuine evil. But in its later development Stoicism conceded that, for the needs of the active life, these two sides of the coin were of differing values. Thus, health was something desirable and sickness undesirable. Chrisippus terms it madness not to desire health, wealth, and freedom from pain. An incurable disease was held to be a sufficient reason for suicide. Zeno hanged himself because of a broken finger.¹⁶

The most important and decisive development in the special status assigned to the sick was introduced with Christianity.

Christianity came to the world as a religion of healing, as the glad tidings of a redeemer and of redemption. The world was sick with sin and in need of the cure of grace. This new teaching, in contrast to the other religions of the ancient world, which were religions for the healthy and just man, appealed to the sick, to the weak, to the crippled.¹⁷ It spoke of spiritual healing, but it also spoke of bodily healing. Did not Christ himself heal many of the sick? Sickness was no longer a stain, no longer a punishment for one's own sins or for those of others. Sickness did not make a man less worthy. On the contrary, sickness meant purification. Sickness was held to be a grace. Out of the pathos of suffering came an ethos. Disease is suffering, and it is through suffering that mankind is completed. Suffering is the friend of the soul. It develops spiritual strength. It turns the gaze of the human spirit towards eternity. Sickness has become the cross which the sick man carries, following in the footsteps of Christ.

¹⁵ Plato, *The Republic*, III, 408

¹⁶ See Zeller, *Die Philosophie der Griechen in ihrer geschichtlichen Entwicklung*, ed. 5, 1923, vol. 1, p. 5.

¹⁷ See A. Harnack, *Medizinisches aus der ältesten Kirchengeschichte*, Leipzig, 1892.

To suffering humanity the Christian religion brought a great liberation. The sick man was freed from the stigma that had previously been attached to his condition. Disease must be completely suffered, for it was in the very fullness of suffering that a human soul found purification. To be sure suffering was painful but pain itself had taken on a new meaning. It could be freely expressed. As Max Scheler put it, "The cry of the suffering creature, so long repressed, sounded again free and sharp throughout the universe."¹⁸

Disease must be completely suffered, says the Christian ethic of suffering. Is there, then, no place for the physician? Does the physician have the right to shorten suffering? On this point, there runs throughout Christian literature the familiar refrain from Ecclesiastes 38:1 "Honor the physician because of necessity, for the Most High has created him." Quite another attitude, it must be admitted, from the Homeric "The physician possesses the skill properly belonging to the gods alone" or the Hippocratic phrase on the godlike ness of the physician. Again and again, Christian writers feel the need to justify the physician, perhaps through the argument that he is a servant and instrument of God, or that the body is the earthly vessel of the immortal soul and so on.¹⁹

Disease is grace. The healthy can participate in this grace through association with the sick. Indeed, this was enjoined upon the healthy as a duty by the very word of Christ Himself: "I was sick and you visited me. Whatsoever you have done unto one of these the least of my brethren, you have done it unto me."

The place of the sick in society was altered from its very foundation. Whereas disease in the entire course of previous historical development had sharply isolated the sufferer, in Christian times he was actually brought closer to his fellow men by the fact of his illness. The special status of the sick has become a privileged status. The diseased person is a man who has become a participant in the grace of God. To care for him is a Christian obligation, is positively beneficial to the salvation of the soul. The birth hour of large scale organized care of the sick had come. The care of the ill is now the concern of the church. The bishop is in charge, the deacons and widows are his active agents. On Sundays, free will offerings are collected for the sick and the poor of the church com-

¹⁸ "Vom Sinn des Leides" in *Schriften zur Soziologie und Weltanschauungslehre* Moralia Leipzig 1923 p. 97. On this point see also Paul Keppler *Das Problem des Leidens in der Moral* Freiburg 1894.

¹⁹ See Paul Diepgen *Die Theologie und der ärztliche Stand*, Berlin Grunewald 1922.

tion. There is no lack of irony in the fact that the scientific expression still used by the physician is *Lues insontium*—the plague of the innocent. The stigma which falls upon the syphilitic also extends to skin diseases generally among large sections of the populace.

The idea that sin is a punishment also survives in the feeling of self-righteousness which many sick persons experience as a result of their suffering.

Finally, psychoanalysis has discovered that many diseases, like many accidents, occur very often as self-punishment for sins of thought, which society holds blameless.²¹

The ancient valuation of the sick as men of lesser worth is still a current attitude. We grasp the hand of a man and notice that several fingers are missing. Our first instinct is to ask him sympathetically by what accident he came to lose them. We suppress the question, not only because we wish to spare him the recollection of a painful experience but also because we unconsciously feel that the injury should be judged both by him and by us to have made him somehow less than a whole man.

But the dominant attitude is that which recognizes the privileged position which the sick man enjoys. Certainly sickness still isolates men in the sense that the daily routine of the sick man is entirely different from that of the healthy one. But this isolation does not remove him from the concern of mankind but rather brings him even closer to his fellows. The mother loves the sickly child more than she does her healthy children. In times of sickness husbands and wives draw close together. The sick person occupies the central position in the attention of the family, for life revolves around him. Relationships which seemed entirely broken are made close again by sickness. Just as pain shows us that something we have always taken for granted has departed from us, so every disease which attacks an individual human being calls attention to his integral relationship to a social group. Society suffers in sympathy with the illness of one of its members and is moved to take every possible measure to prevent his loss. Even the poorest, the most abandoned, who has no one in this world to care about him, becomes party to an intimate person-to-person relationship with at least one other man, the physician who comes to him as a service from the government.

Illness releases. It releases from many of the obligations of society

²¹ See Fritz Wittels, *Die Welt ohne Zuchthaus*, Stuttgart-Leipzig, 1928, p. 120 ff.

first, from school attendance, and generally from work duties. The sick person is relieved from many important concerns with which society demands that the healthy busy themselves. Yes, the sick man even becomes the object of duties, the recipient of special attention. Illness frees a man also from the performance of many occupations. It also lessens the degree of responsibility or removes it entirely, a viewpoint which has revolutionized the penal law from its foundations.

So far does the privileged position of the sick extend that the execution of a sentence of death upon a man is feared if he is ill. Several years ago in Greece the minister of a fallen cabinet was shot, and he captured the sympathy of the world because of the fact that he was very ill with typhus at the time of the attempted assassination.

Illness frees a man from the obligation to work. In other words, it places him in the ranks of the unemployed. In today's society, in which work is the absolute prerequisite for any kind of existence, in which supply and demand rule the labor market, the position of the sick worker must inevitably be a little dubious. His place does not really exist in the sense that the sick man through becoming ill becomes an outsider to the economic order.²² The state enjoins upon its individual members who are economic liabilities that they put aside a part of their pay during their times of health as insurance against times of sickness.²³ With this institution, the worker acquires a right to help and care. He cannot work, but he will, nevertheless, be paid—with money that he himself has earned. He is no more at the mercy of society, no longer a recipient of charity. The privileged position which he enjoys as a sick person is one which he has in a certain sense earned through his labor. The fact that the healthy and strong worker, who needs little insurance himself, permits a portion of his wages to be used to help the worker who is frequently ill is a fine expression of human solidarity.

The firmer the privileged position of the sick, the sooner will the inclination appear to take that position voluntarily, to escape from the struggle of living into sickness. This is by no means a rare occurrence. It appears at the root of a talent for becoming ill, which we call hysteria. The more intensive the struggle of existence, the more irritating the friction of modern life, the greater the demands of life will be upon the

²² Hans Freyer "Der Arzt und Gesellschaft" *Der Arzt und der Staat* Vorträge des Instituts für Geschichte der Medizin an der Universität Leipzig no. 2 1929 p. 13 ff.

²³ It is self-evident that the portion which the employer pays to defray the cost of social security is also to be regarded as a form of wages.

individual and the more frequently will occur the conditions which produce hysterical disorders. But one must avoid generalization. It is, above all, necessary to avoid using that vulgar word *malingering* on every occasion. A man who has succumbed before the stress of life, who can find no other way to save himself than to flee into the safety of illness, is a wounded creature (even if there is no hysteria actually present), and he has called out for help.

When the opponents of social security bring up again and again, as an argument against it, the fact that the number of days of illness has increased since the institution of insurance, they overlook the fact that today, thanks to insurance, numerous cases of illness are treated which before would not have been. They overlook above all that, granted the fact that the number of days of illness has increased (more thanks to increased care), the state of health of people generally has become a great deal better and that the average life span has increased to an almost unbelievable degree.

The development of the modern state has brought a new feature into the position of the sick. In earlier times, sickness and health were matters of private concern, but now there is laid upon the individual a positive duty to be healthy. The law to stamp out venereal diseases, passed in 1927, is the first step in this direction. Whoever spreads this type of disease, whoever, having contracted it, neglects to do all that is possible to be cured is an outlaw from society and as such subject to punishment. The stigma of sinfulness and the stigma of being less worthy have been in large measure removed from the sick, but a new burden has begun gradually to be placed upon them, and that is the stigma of at least being an antisocial human being and even in many cases a criminal.

Society has developed the special status of the sick into a far-reaching position of privilege. It has placed today within the power of almost every person the means to maintain health and to cure sickness. It can appropriately and rightly demand that the individual be conscious constantly of his obligation to the general welfare of society.

TRENDS TOWARDS SOCIALIZED MEDICINE



WHEN we look at the physician and patient in ancient society we will find that the relationship between these two men was their own private matter. If a man got sick, and if he had sufficient means, he purchased the services of a physician, and whatever happened between the two did not concern anybody else. Health and disease were considered a private matter of the individual, and the state did not think of interfering in this most intimate relationship. Epidemics were considered natural catastrophes; one died or survived them and waited for better times to come.

The general tendency of the state was to interfere as little as possible in the individual sphere. The state had to raise taxes in order to keep up its administration, to protect the territory from foreign invasions. It established codes of laws protecting the life, property, and rights of the individual. If a man paid his taxes in time and respected the laws, he had done his duty towards the state. He may have been subject to

.....

At the depths of the great economic depression of the 1930's, it was widely expected that national legislation would be enacted to spread the costs of medical care. The Milbank Memorial Fund held annual conferences on major health issues, and in March, 1934, its conference included round tables on national health planning and medical care. At the dinner meeting in New York Professor Winslow from Yale spoke, and Mr. Harry Hopkins came from Washington presenting the views of the Roosevelt administration. Put the background of world trends toward socialized medical services was first of all briefly sketched by Dr. Sigerist in the paper presented here. The paper was published in *Problems of Health Conservation*, New York, Milbank Memorial Fund, 1934 pp. 74-83.

regulations in his trade or profession, but they were regulations established not by the state but by private organizations. The Greek physician in the fifth century B.C. had his code of ethics, the medieval craftsman his guild regulations, the soldier his code of chivalry, etc., but they were all private concerns of definite groups of men.

Society has developed into a more and more complex organism. A great many functions which formerly were left to private initiative and common sense of the individual have become part of the administration. The citizens of a modern community had to take a great many duties on themselves which had been unknown to them before. If we wanted to build a house formerly, we could do it as it pleased us best. Today we are not free in this respect. We have to adapt our ideas to the general building plan of the city. We will be told where the entrance has to be, and we have to observe definite fire regulations. We accept these regulations because we recognize the fact that they benefit not only the community as such but ourselves as well.

Many other duties have been imposed upon us and have been accepted by us. We have to send our children to school whether we like it or not. During the nineteenth century, most European countries instituted compulsory military service. Society, in order to secure the welfare of all its members, had to intrude into the individual freedom and to impose more and more duties.

The French Revolution had proclaimed the rights of man but not the duties of man. The nineteenth century, in its liberalistic attitude, tried to preserve as much individual freedom as possible. It was easy in a young and thinly populated country like America but difficult in the European countries. It became more and more difficult as the population increased, large cities developed, and as industrialization created entirely new living conditions. It became impossible in our own highly specialized century. Today we are all dependent upon each other, and if parts of the population suffer the whole organism will be affected. We therefore have to give up many of our individual rights, to submit ourselves to a certain civil discipline, to recognize more and more our duties towards society, in our own interests as well as in the interests of our fellow citizens.

It is quite obvious that medicine could not stay apart from this development—that medical service had to be affected by these general trends. A first step in this direction was the public health movement, the roots of which can be traced far back. As soon as one had a clear conception

of contagion, epidemics were no longer considered natural catastrophes. They were occurrences that could be studied scientifically and could be prevented. The task, however, was so big that it could not be carried out by a single individual but only by society as a whole. In this case, the state did not encroach on the personal relationship between physician and patient. It called for the physician as an expert adviser. With his help, the surroundings of man were made cleaner and healthier by means of administrative measures. Medicine progressed, our knowledge of contagious diseases was tremendously increased. More and more means for fighting such diseases were given to us. They would have been worthless had they been left to the initiative of individual physicians and patients. The vaccination laws are a good example of this. Vaccination undoubtedly was a great discovery, but it could have been useless had it not been applied on a large scale. The vaccination laws are extremely interesting from a sociological point of view, as it was the first time that the nineteenth century state dared to break into the private sphere of the individual, compelling him to be made sick artificially in order to protect himself and his neighbors from more serious illness.

Another line of development is to be found in the legal situation. Jurisprudence has progressed too. It differentiates between the responsibility of different individuals, according to their mental condition. A man today cannot be made liable for a crime done in a state of insanity. The judge therefore, needs the cooperation of the physician just as the administrator does, and decisions of vital importance are placed in the physician's hands. The modern trend towards prevention of crime through educational and mental hygiene measures gives a more and more important place to the physician in the prevention of crime and finally in the protection of the rights of the individual.

In this case just as in the case of public health, the physician's contribution in the beginning was purely advisory, but as things developed the physician was given a more and more active part, getting in direct contact with the individual.

A further step in the development was reached when the European countries introduced compulsory sickness insurance, as the result of economic development. Large parts of the population could not possibly purchase medical service. They were too numerous to be taken care of by charity. Society, however, had a tremendous interest in keeping the working classes in good health conditions so there was no other way left but to introduce compulsory sickness insurance for these classes of the

population. Enforcing sickness insurance, society gives the indigent sick not only the means for restoring his health but also a right to medical care. The value of health, the necessity for medical care for everybody, was clearly formulated in this way fifty years ago. The personal relationship between physician and patient was not directly affected. There will always be such a personal relationship, under whatever system a physician sees a patient. But both will feel that they are backed by society, which protects them and ensures their coming together. Both physician and patient are individuals who deal with each other as individuals but both are members of society, and the physician representing society at large takes care of the patient as a member of society.

The modern state has recognized the conservation and maintenance of public health as a primary function of the government. This has been expressed unmistakably clearly on June 23, 1933, by the Federal Emergency Relief Administration.

Society in our day has taken the part of health. It endeavors by all means available to preserve health and to restore it to all its members.

Today Dr. Hartwell asked for a definition of "adequate medical care." Very often you will be asked for a definition of "health." What is health? It is extremely difficult to give a scientific definition of health, just as I presume it will be very difficult to give a scientific, absolutely satisfactory definition of adequate medical care. And yet it seems to me that it makes no difference whether we have a definition or not, because all of us who are working for the people's health have a practical concept of what health is and of what good and adequate medical care is.

It seems to me that our medical schools have a very great and very important task to fulfill in this respect. In this country we have splendid opportunities for the training of public health officers, but in this country, as well as abroad, the instruction in preventive medicine given to our medical students is insufficient. This is not a matter of courses and of numbers of hours. It is much more a definite attitude toward health that we have to give our young medical students. We have to get them interested in health just as we get them interested in disease. We have to make them health conscious just as we try to make them aware of the phenomena of disease.

The young doctor who settles in a rural district goes to the open land not merely as a therapist but as an apostle, as a missionary of health, as a propagator of health ideals, as a guide of the population towards a healthier and happier life.

There can be no doubt that today there are definite and strong trends towards socialization. What the attitude of the nonmedical public is was realized today very clearly, I believe, by what the Mayor of the City of New York said, and there the medical schools have a great task also. It is not merely a matter of education of the public nor of the legislator but of the medical student as well, who has to be educated in this respect just as much, if not even more. Just as in the field of health he has to be interested in, he has to be made conscious of the great social problems that are waiting for him.

Like the judge and the teacher, the physician has been called to cooperate with the authorities for the welfare of the commonwealth. It is quite clear that such a cooperation can only be fruitful if there is some kind of organization that secures an efficient medical service within the common scope. We ought to be proud that society has realized that medical service is as important as education, that it has declared that the enforcement of health is just as important as the enforcement of law. Society has challenged the profession by giving it greater tasks and more power than ever before. It is up to the profession to answer the call.

THE MEDICAL STUDENT AND THE SOCIAL PROBLEMS CONFRONTING MEDICINE TODAY



FELLOW students It is a joy to talk to you I feel as one of you I have been a student all my life, eager to learn I have probably seen more than most of you, having had the good luck to live and work in quite a number of countries, and still having the privilege of spending part of the year traveling But I know that I have a great deal more to learn It is fifteen years now since I began teaching at the University of Zurich I do not know how much the students got out of my teaching, but I know that it meant a great deal to me, that it helped me tremendously in obtaining a clearer understanding of the developments and trends of medicine

The fact that we have come together, nearly three hundred medical students and some faculty members from fifteen different medical colleges to discuss some social aspects of medicine makes it evident that we all feel that something has changed and is still changing in the medical world As Dr Bayne Jones said yesterday, such a conference would have been inconceivable in America twenty years ago It would not have occurred to the medical students that there were social problems which

In the depression years of the 1930s medical students throughout the United States expressed their interest in social and economic problems through the organization of various associations At one of the early conferences of this student movement held at the Yale Medical School Dr Sgerist gave his support in this address The paper was presented at the Third Eastern Medical Students Conference in New Haven Conn on March 15 1936 It was published in the *Bulletin of the Institute of the History of Medicine* 4 411 422 May 1936 It was also published in the *Medical Bulletin* (Student Association New York University College of Medicine) 1 3 10 April 1936

they had to discuss. This does not mean that there were no acute social problems at that time, by no means, but the medical profession felt secure. The physician had his definite place in society. He followed the call of his profession and in doing this was sure to make an income. Things have changed.

Time marches on inexorably. There is no way back. There is but one way for us to go, the way that leads into the future. It is useless, it is sheer romanticism to call for the good old days. And besides, how good were those days of ruthless competition, when the stronger crushed the weaker without mercy, when we danced on a volcano?

What has changed? To put it briefly, a new society has developed in the western world, highly industrialized and highly specialized. At the same time a new medical science developed, highly technical and highly specialized also. The natural sciences and technology were the revolutionizing forces that transformed both society and medical science. This was a slow and gradual process, but the day has come when we have become aware of it. Facing a new situation, what are we doing? We are endeavoring by all means available to preserve the old forms of medical service, forms that were adapted to a society and to a medical science that do not exist any longer. Hence the unrest in the medical world.

There is a great deal of talk about medical ethics. You will hear quite often that to be ethical for a physician is to be conservative, living up to the age-old traditions of medicine, swearing to the Hippocratic oath. Nothing is more erroneous. I grant you that there are certain timeless values in the physician's profession, that the basic relationship between physician and patient has always been the same, yet there can be no doubt that medical ethics change also. What determines medical ethics is a definite medical ideal, an ideal set not by the physician but by the society he is serving. It is obvious that this ideal changes in changing societies and that it makes a difference whether in a given society the physician is a craftsman, a cleric, or a scientist. And, just as medical ethics are determined by a medical ideal, so is medical education. All education tends towards a definite educational ideal. Every society has an ideal citizen in mind and endeavors *through elementary education* to form this ideal citizen. If there is unrest in medical education, if we spent the whole morning discussing "What is the matter with medical education?" it shows that we are not quite sure as to the medical ideal of our days.

In the medical as in other fields there is today a conflict between a new reality and the old form. What shall we do? Shall we stand aside letting things go and then complain if we dislike the developments, or shall we take an active part in the evolution that is bound to come? If we want to do this, we must be able to analyze the situation; we must become history conscious and must attempt to take the long view of things.

Here in America we must be aware of the fact that the country has lost its unique position in the world. There is no frontier any longer. There are no unlimited opportunities for the individual as before. There is practically no immigration, and as a result society is becoming stabilized and the classes are becoming conscious of themselves. In other words, the conditions are more and more similar to those in European countries and you will not be spared any trial through which Europe went. It is certainly worth while to study the European conditions carefully and to learn from them in order to avoid mistakes.

We are proud of our civilization, but are we civilized? We have devised marvelous machines, but we do not know how to use them. We still have recourse to war, the most barbaric means of solving international problems, and there are even countries in which war is glorified. We thought the nineteenth century had gotten rid of certain primitive legal procedures, as for instance the torture, and yet in quite a few so-called civilized countries prisoners are tortured in the most savage way. I do not think that we can call ourselves civilized yet, and, to the future historian looking back at the five thousand years of history of mankind from the early days of Egypt, Babylonia, and China to our days, this period will appear as a time of dark ages. Our only excuse is that five thousand years is a short period in the history of mankind.

And yet man has a craving for culture. Man is ready to sacrifice himself and to sacrifice his personal interests for the attainment of a higher goal. Under proper guidance and proper education, under different social conditions, mankind will be able to develop a civilization. There will always be suffering in this world because there will always be love and hatred, frustrated ambitions, but we begin to realize that man should not be allowed to suffer from such primitive causes as hunger or cold or preventable diseases.

The conception that all inhabitants of a country, regardless of their race, social status, and earning capacity, are entitled to the best medical care that the country has to give is beginning to crystallize today. It has

been recognized that the people's health is essential for the welfare of the nation. Yet the progress of medicine has raised the cost of production to such an extent that medical service has become too expensive to be available to all under our present system of free competition. That this system could not possibly work completely was recognized long ago, and in all western countries there was an increasing tendency of the state to take over medical functions. Many such functions have become part of the administration of the modern state. Through its public health service the state endeavors to protect social groups from outside menaces. The state is protecting the health of certain groups particularly threatened, pregnant women, infants, and school children. It is taking care of the tubercular and the mentally sick patients. Through legislation, compensation bills and similar laws, it endeavors to protect the working population. It has called for the physician as expert adviser in the administration of the law. In many countries the state is requiring and supporting compulsory health insurance, and there can be no doubt that the tendency towards state interference in health matters is growing all over the world. It is justified by its success. Nobody can deny that the hazards of life have been tremendously reduced today, thanks to the organized medical work done by state agencies.

The principle of medical service given on the basis of free competition has also been overcome by charity institutions providing for the medical care of the indigent sick. Charity, however, is an unreliable institution, funds being most needed in times of economic depression when they are least available.

Yet in spite of all efforts the fact remains that many members of our society do not receive adequate medical care. Medical science today has infinitely more to give than the people actually receive. There are still thousands of people who die prematurely, whose lives could have been prolonged if the physician had had the opportunity to intervene in time. We still have huge reserves of medical knowledge that we can not fully apply, due to religious, social, and economic factors. This maladjustment is not the result of the present economic depression. At the height of prosperity in 1928 the Committee on the Costs of Medical Care was appointed to survey the field because, even then, in a country that had the highest material standards ever developed in the world, conditions were such that many sick people had no adequate medical care.

This is the situation that we are facing today. I repeat there is a conflict between a new reality and an old form. It is not enough to in

interpret the world; one has to change it in order to improve it. If the medical conditions are not satisfactory, they have to be changed in order to improve the people's health. This is the task that is set for you, the young generation. You cannot afford to stand aside. It is not only your own personal future that is at stake but the welfare of the society you are serving. You will have to take an active part in the development. You cannot expect the old physicians, the leaders of the medical organizations, to do all of the work, to solve all of the problems. The leaders of our professional organizations are great doctors who have done splendid work in the various medical fields. They belong to another generation than yours, and if the old system has worked very well for them it does not mean that it will work for you today. They attained high positions by devoting their lives to their profession, and most of them naturally had no time for studies in history, sociology, or economics. The problem that we have to solve today, however, is not primarily medical but first of all social.

Whatever the future will be, the life of your generation will not be an easy one. And yet what does it matter? To have a "good time" is the ideal of an animal and not a human ideal. What counts in life is to be able to do some creative work, to be able to give one's share in forming the world, in improving it. And this is easier today, when everything is in the process of transformation, than ever before. It may be objected that you have no experience yet. This is true, but what is needed at the present time just as much is enthusiasm, courage, and an iron will to create a better world.

I anticipate your question, "What shall we do?" My answer is: study! Study history, political economy, sociology! I know that your time is limited and that the medical curriculum is exceedingly absorbing. And yet, if you want to live and to act consciously and intelligently, you have to have some knowledge in the social sciences. The idea is not to make you experts in the subject, but you must have a certain knowledge in order to be able to understand the world in which you live. Without some knowledge of history you will not be able even to read the newspapers intelligently. History teaches us where we stand today and what tasks have been assigned to us. And, just as political history gives us some orientation as to the world at large, so the history of medicine helps us to understand our medical situation. Medical history is studied and taught not in order to burden you with names and dates but in order to allow you to look at medicine as from a distant planet. The historian

of medicine endeavors to make unconscious trends conscious so that we can face and discuss them openly

Medicine the way we practice it today is a service that is being sold by the physician and purchased by the patient. Medicine, therefore, definitely has an economic aspect. It has to fit into an economic system. How can we discuss any of these features if we do not know the elements of economics, if we do not know the mechanism of production, what wages are, and what determines wealth or poverty in a society? Without economics there is no understanding of history, either general or medical. And finally you cannot afford to be disinterested in sociology. The physician is serving society. He has to fit himself into a given structure of society. He has to see patients who come from all strata of society and has to treat diseases that are quite often due to an environmental influence. The majority of our patients live differently than we do under infinitely worse conditions. In my seminars I often make the experiment of asking the students if they have ever seen the working conditions in a mine or a steel mill. Very few have, and yet it is essential to us to have an intimate knowledge of the living and working conditions of our patients and to know the mechanisms responsible for so much misery and illness.

We require that the student who applies for admittance to the medical schools have a definite training in the sciences during his college years. We have no requirements in the social sciences, and yet there can be no doubt that medical students should have had a sound training in these sciences as well. Let us not forget that medicine, after all, is a social science, the physician's task being to keep his fellow men socially adjusted or to readjust them as the case may be.

You cannot change the world by looking into the microscope and test tube. Science for science's sake is admissible in stable periods. And yet, if we have troubles today, they are due to a certain extent to the fact that our medical ancestors of the last century directed all their efforts to laboratory work, neglecting the social side of medicine. In times like ours, the microscope and the test tube become powerful weapons. We need science today more than ever. Several European countries have demonstrated what happens when science and reason are disregarded and when a state is built on a vague, mystical ideal. We need science, but we still have to learn how to make use of it for the problems of mankind. Here, again, history has a great lesson to teach.

The physicians are looked upon as leaders in the social developments

to come. They are perhaps better qualified than any other professional people to assume active leadership. They are scientists applying their science to a social and highly humanitarian purpose, getting in close touch with all classes of society. You will be physicians soon, and you are considered members of the intelligentsia, of the educated class. But are you educated? Yes, as far as medicine is concerned. You are given the best that medical education can give today. However, you will admit that politically the majority of the medical students in this country are perfect children. Yet you are all responsible citizens of a democratic country, having the privilege to vote and to influence the destinies of your country. To me, coming from abroad, it was a shock to see how many educated people vote purely emotionally or following family traditions without devoting any study to the problems at stake. This is a dangerous attitude. I remember that once in Germany one of my friends was asked in my presence whether he was a Nazi or a Socialist. His answer was, "I am a physicist." Well, he is still a physicist, but he is told now what he has to think. We cannot afford to be politically indifferent. Politics is everything in life and in the medical field as well. Whether medicine succeeds or fails, whether the arts and sciences flourish or starve, is ultimately due to politics. We are fighting to improve the people's health. We have the actual knowledge to prevent and cure a great many diseases, to save endless people from premature death, but whether we can apply our knowledge fully depends much more upon the statesman than it does upon us. We know, for instance, what tremendous importance the housing problem has for the people's health, but all we can do is to point out the facts. The actual task is political.

I would like you to be critical, to doubt authorities, to form your own judgments. You are trained to be critical in science, but as soon as a scientist leaves his own domain he is often as uncritical as a member of a savage tribe. It is so easy to join a church, be it religious, political, or scientific. All the thinking is done; you receive the answer ready made for every problem, and all you have to do is to repeat slogans. I do not mean that you should not join any group. On the contrary—the individual is powerless, and only group action carries weight—but do not join before you have done your own thinking. One criticism I have with the American educational system is that the students are constantly advised. Life is made much too easy for them. They go to the university as to a source that will give them a certain amount of knowledge, conveniently dosed so that it can be absorbed without much effort. They do not feel

challenged. They look to their professors as to authorities whose words they repeat often quite uncritically. I infinitely prefer to see my own views opposed by my students than to hear them quoted as authoritative statements. The European student who has to study independently without being constantly advised and supervised and who has to struggle against endless difficulties, has a much better chance to develop his personality.

How can medical students acquire knowledge in history, political economy, and sociology? It is obvious that courses can help a great deal. We are giving them at the Hopkins and the response they find proves that they are answering a real need of the students. The sociological course that I started several years ago traces the development of society and the medical profession in their interrelationship. It shows what attempts at medical organization have been made in other countries and what the American situation is. The outlines of this course are briefly as follows:

1 *Developments in the position of the sick man and of the physician in society* Disease as a punishment for sin (Semitic society) Disease rendering man an inferior being (Greek society) Privileged position of the sick man from the beginning of our era on Duty to health (modern developments) The physician a craftsman (early Greece) a cleric (early Middle Ages) a doctor

2 *Medical service in the ancient societies* The Code of Hammurabi and ancient Persian laws regulating medicine The wandering and the community physician in Greece Ancient medical ethics The conditions in the Roman Empire *Valetudinaria* for slaves and military hospitals Beginnings of medical licensure

3 *The Middle Ages* How was medicine organized in the feudal society of the medieval states? Medicine and the guilds The universities The church and medicine The legislation of Frederick II

4 *The rise of capitalism* Development of a new economic order Medical conditions from the Renaissance to the eighteenth century

5 *The Industrial Revolution and its consequences for the people's health*

6 *Developments in Germany* Socialized medicine in the Duchy of Nassau (1818-1861) the discussions of 1848 history of German social insurance from 1881 to 1933

7 *Political philosophy and medicine* (a) *Liberalism* Medical organization and trends in England France and the Scandinavian countries.

8 *Political philosophy and medicine* (b) *Fascism* Medical organization and trends in Italy and Germany

9 *Political philosophy and medicine* (c) *Socialism* The protection of health in the Soviet Union

10 *The American situation* I Developments and facts an analysis of the reports of the Committee on Costs of Medical Care

11. *The American situation, II. Discussion of the various present day experiments in medical organization.*

12. *Conclusion and outlook.*

Most medical schools in this country are beginning to recognize that some kind of instruction has to be given to the students along that line, and in most schools courses are given on economic and social aspects of medicine. In the majority of cases this is done in a more or less haphazard way. Most medical schools fail to realize that they are called to assume leadership in this field also. Their research activities should not be limited to increasing our knowledge of disease, of its cure and prevention; they should include the ways and means of applying our knowledge. They should include research in the sociology of medicine. With their highly specialized staffs and hospital facilities, the schools have the opportunity of experimenting on a very broad basis. Millions of dollars are spent in laboratory research, but hardly any money is available to study how we can apply the results of our research to the maximum benefit of the population. I would like to see special departments or special divisions of departments established in which medical men could study the social implications of medicine hand in hand with economists, sociologists, and social workers. Such departments would be the ideal places to train a socially minded generation of physicians.

There is no doubt that courses can help the student a great deal, and yet they do not suffice. The idea of a course is to inspire, to stimulate, to challenge the student, to show him what the problems are, the actual work he has to do himself. I know that your time is limited, but I would advise you to spend whatever spare time you have in studying and trying to keep in touch with the world outside the medical school. Read! Read newspapers, but not only those of one political group, which are naturally one-sided. If you want to form an opinion, you must read the newspapers of the various groups. Read the weekly political magazines, of which there are so many excellent ones in this country. Read books, but not only medical books. There is more psychology in novels like those of Marcel Proust, Thomas Wolfe, and others than in many textbooks of psychology. The classics are a mine of wisdom that should always be open to us. And, wherever you go, keep your eyes open, observe, and reflect on what you see. Observation and correct reasoning are the keys to medicine, but you should use them as well in the other fields of human activity.

I would further suggest that you form discussion groups. There is

nothing more stimulating than frank discussions with fellow students. A year ago the students of our medical school spontaneously organized a social problems forum, which meets on two evenings of every month, and it has been tremendously successful. Each meeting has had an average attendance of far more than a hundred students. The following subjects have been discussed during the past year:

- "The Medical Student in the Modern World," Dr. Henry E. Sigerist
- "The European Situation," Dr. F. S. Dunn
- "Sterilization as a Social Problem," Dr. Alan F. Guttmacher
- "Fascism," Dr. Johannes Mattern
- "Medicine in Its Relation to Social Security," Dr. Frankwood Williams
- "The Early History of the Johns Hopkins Medical School," Dr. Alan Chesney
- "Preventive Medicine in Evolution," Dr. Allen W. Freeman
- "The Protection of Health in the Soviet Union," Dr. Henry E. Sigerist
- "The Development of Public Health Work in the Eastern Health District of Baltimore," Dr. H. S. Mustard
- "The Social Aspects of the Control of Syphilis," Dr. J. Earle Moore
- "Housing in Elizabethan England," Dr. Sanford V. Larkey
- "Should Housing Be a Public Utility?" Dr. Ivan E. McDougale
- "Genetics, Sterilization, and the Social Order," Dr. Mark Graubard
- "Science, Medicine, and the Common Life," Dr. Anton J. Carlson
- "Will the Recent Neutrality Legislation Keep Us Out of War?" Mr. Frederick J. Libbey

I hear that other schools are starting similar discussion groups, and our Third Eastern Medical Students Conference is one more symptom of the generally felt need for frank discussions of the burning problems of our days.

If the medical students of this country are willing to study the social developments of medicine, they are justified in having a voice in the discussion of the readjustments that are taking place. The individual voice is lost, but, properly organized, the young medical generation could have a great influence in the coming developments. After all, it is its own future that is being prepared.

Do you realize how many you are? There are nearly 26,000 medical students in this country, about 6500 internes, about 2500 resident physicians—all in all a group of about 35,000 young medical men who, a few years from now, will play an active part in the protection of the people's health. This is a strong group, strong enough to have its own journal as a forum for discussion. I am sure that the faculties and the profession at large would welcome associations of the medical students. It would

give them a chance to hear what the young generation thinks and to consult with them on questions of medical education. In most European countries the students and internes formed associations long ago and have taken an active part in the developments. This country is no longer a colonial or a pioneer country, and conditions similar to those in Europe will necessarily lead to similar developments. Being less burdened by tradition than the European students are, you have good chances to learn from them how to avoid mistakes and to do a better job.

Whatever your position is I wish you would make an effort to understand the foundation of our society, to analyze the tendencies and trends. Keep in mind that you will never be able to oppose these trends successfully, because they are beyond your control, because they are the inexorable result of society's very foundation. But if you recognize them clearly, if you are willing to cooperate, to fight if necessary, you will be able to accelerate the developments and to make this world a better world.

SOCIALIZED MEDICINE

IN a report published last year by the American Foundation, a professor of medicine in a grade A medical school in the Middle West, member of the Association of American Physicians, wrote: "I do not believe that a patient is entitled to free medical service any more than he is entitled to free housing, free clothing, and free feeding." In other words, if a society is unable to provide work for all its members, it is perfectly normal for the unemployed to be evicted from his home and to run around naked, sick, and starving. Such a view is not only barbaric, but it is utterly foolish. Nobody seriously believes that any group of unemployed American workers would sit down quietly and wait for death to relieve them. They would kick before they starved, and any government that shared the professor's view would be overthrown at the first major economic crisis.

If our professor's statement represented the general view of American society, there would be no reason for discussing our present system of medical care. Medical service then would be a commodity sold on the

.....
Questions concerning the organization and distribution of medical care have often been confused by the term "socialized medicine," and many serious students of the field have avoided the term entirely. In this paper, Dr Sigerist offers an accurate definition of the term, what it would mean specifically in practice, and the answers to common objections raised. The paper was published in *The Yale Review*, Spring 1938 pp 463-481. Ten years later Yale University appointed Sigerist, after he had returned to Switzerland, to its faculty *in absentia*.

market to whoever could afford to purchase it. American society, however, like any other civilized society, feels differently in the matter. It has come to realize that a highly specialized modern industrial nation cannot function normally if its members are sick, and that it is a wasteful burden to carry a large number of sick and half-sick people. The propertied class, moreover, knows very well that a diseased working class is a menace to its own health. Tuberculosis today is largely confined to the low income groups, but venereal diseases have not yet learned to respect class barriers.

Most people agree that it is in the interest of society to fight disease and to provide medical care for the whole population regardless of the economic status of the individual. This is, to begin with, a purely practical and utilitarian consideration. Our attitude, however, is also influenced by humanitarian motives. After all, some of the humanitarian ideals of the nineteenth century are still alive. Every society has many thousands of perfectly useless members, mostly feeble-minded and mentally diseased people who will never be able to work and will never contribute anything to society. And yet we do not destroy them. We consider them unfortunate fellow citizens. We feed them, nurse them, try to provide tolerable living conditions for them, hoping that science, some day, will give us sufficient data to allow us to reduce their number.

There are people today—their number is increasing—who think that man has a right to health. The chief cause of disease is poverty. If we are unable to provide work for everybody and to guarantee a decent standard of living to every individual willing to work, whatever his intelligence may be, we are collectively responsible for the chief cause of disease. The least we can do is to make provisions for the protection and restoration of the people's health. They have an undeniable right to such provisions.

Once we accept the principle that medical care must be available to all, we must examine whether the people actually receive the services they need, under the present system. There are still doctors who pretend quite ingenuously that there is not one man in the United States who could not get medical care in case of illness if he took the trouble to ask for it. They point out proudly that our hospitals have charity wards and that the medical profession, conscious of its humanitarian traditions, has always been ready to help the poor without remuneration.

Nobody will deny the good will and idealism of the medical profession. It has made desperate efforts to remain a liberal profession and has re-

fused steadily, but in vain, to be dragged into business, into a competitive world that is ruled by iron economic necessities. The doctors are not responsible for the fact that the social and economic structure of society has changed. They did the best they could and kept to the job under increasingly adverse conditions. Their good will and idealism are still wanted, more than ever before, not for charity services, however, but to enable them to face the present conditions with an open mind and courageously, and to cooperate in their readjustment.

Long before the depression, it was felt that medicine had infinitely more to give than the people actually received. At the height of prosperity, in 1928, the Committee on the Costs of Medical Care was appointed to survey conditions. Whoever looked around without prejudice saw people, many people, who had not sufficient medical care. We all knew families whose budget was wrecked by a sudden illness and we all had friends who hesitated to enter a hospital or to undergo certain treatments because they could not afford them. The many reports of the Committee on the Costs of Medical Care gave us facts and figures for what we vaguely knew, and demonstrated unmistakably that large sections of our population lacked adequate medical care.

If any doubts are left, they will be dispelled by the results of the National Health Survey that was undertaken by the United States Public Health Service as a W P A project. From preliminary reports, we already know that the lower a family's income is the higher is the incidence of disease and the smaller the volume of medical care received. We know that hundreds of thousands of cases of illness are needless and could have been prevented, that many thousands of people die prematurely, and we also know that one third of the population of this wealthy country is not only ill fed, ill housed, and ill clothed but also ill cared for in sickness.

The facts that have become known as a result of the various surveys are so overwhelming that even the American Medical Association could not ignore them and had to admit recently that "a varying number of people may at times be insufficiently supplied with medical service."

The present conditions are not only most depressing and harmful to society but also unnecessary and stupid in a country that has such splendid medical equipment. No country in the world has a better standard of physicians, public health officers, nurses, and social workers; no country has better hospital or laboratory facilities. It is almost a miracle how the United States in less than half a century caught up with

European medicine and surpassed it in many respects. Accumulated wealth and the wisdom of a group of medical leaders made it possible. And yet one third of the population has no medical service or not enough, and great possibilities of preventive medicine have not even been considered yet.

The cause of this maladjustment is easy to guess. Medical service, as a result of the progress of medicine, has become increasingly expensive. A hundred years ago a man with an indefinite pain in his belly went to see a doctor who asked a few questions, palpated the abdomen, and prescribed a laxative. The procedure did not cost much. Most people could afford the fee, or if they were totally indigent they were given the advice free of charge. In most such cases, the patient recovered as he probably would have done without consulting a doctor. In some cases, however, a tumor possibly developed from which the patient died.

The same type of patient consulting a doctor today has a series of X-ray pictures and a number of laboratory tests made, which may lead to the early recognition of a disease at a time when successful treatment is still possible. It is obvious, however, that such an examination, not to mention the treatment, costs money, more than many people can afford to pay at the time.

In other words, it is not only difficult for the indigent to secure for himself adequate medical care but for all families of moderate means, all those whose income does not exceed \$3000 or even more. This, however, means more than three quarters of the entire population. The fee-for-service system may have worked—I doubt if it ever did—as long as medicine had little to give. Today it is impossible to protect the people's health effectively under any such system because there is too wide a gap between the scientific status of medicine and the economic status of the population. Therefore, if we think that the people's health is a major concern of society, we must necessarily devise some other system.

This has been widely recognized, particularly by the victims of the present system, namely, the patients, and since the Committee on the Costs of Medical Care began its work the discussion on the reorganization of medical service has never ceased. It has been and still is a heated and passionate discussion, in which emotional arguments are more frequently heard than rational ones. Many physicians are brilliant specialists in their field but extremely poor economists and sociologists—the natural result of a one-sided technical and scientific education. The discussion also suffered through the fact that many physicians operated

with ill-defined concepts. Medical service under any but the traditional plan was indiscriminately called "socialized medicine," a vague term that few people took the trouble to define, a term that smelled of socialism or even Bolshevism and, whatever its meaning, might be certainly implied something utterly un-American.

While the discussion went on, experiments were undertaken to provide medical service for definite groups. Some of these schemes were sound, others futile. One mistake is frequently made in discussions and experiments and particularly often in the plans recommended by medical organizations: the primary problem is not to devise a system that will enable the patient to pay the doctor's bill, be it on the installment plan, or through prepayment, or under some insurance scheme. The economic consideration is secondary. Our primary concern must be to find a system that will allow us to reach the people, all the people, and to give them the best possible medical service. We know little enough in medicine, but we know something and infinitely more than we did fifty years ago. We now must learn to apply our knowledge without restrictions. And, once we know what we must do and want to do, then we can discuss ways and means of financing such a system of medical service.

Let us be Utopian for a moment—knowing that more than once Utopian ideas have become reality—and let us visualize an ideal medical system, a system that would allow us to utilize all the present resources of medical science. Everybody agrees that such a system must emphasize the preventive aspect of medicine. Every child knows that prevention is better than cure, and yet, of every thirty dollars spent for medical care today, only one is spent in prevention and twenty-nine go for cure—one more evidence that the present system is unable to provide medical service in a sensible way. What, then, would the ideal plan be?

Let us take an administrative district as an example, a county, or a group of smaller counties. The first concern would be to establish a health center consisting of a hospital; dispensary; tuberculosis station; antivenereal station; prenatal, maternity, and infant welfare station; bureau of physical education; bureau of health propaganda; laboratories; public health department; and whatever special institution the local conditions might require. An industrial region would call for a division for the prevention and treatment of industrial accidents and diseases. A malarial region would require other special provisions.

The health center would be staffed with physicians representing all specialties, with public health officers, scientists, dentists, pharmacists,

nurses, public health nurses, social workers, and technicians. It would be an organic medical unit, working as a team, ready to give complete medical service: preventive, diagnostic, and curative. Its function would be to protect the health of the inhabitants of the district by applying all the weapons that medical science has forged. The director of the center would be the chief medical officer of the district, responsible for the people's health and accountable for it to the health department of the state.

Members of the health center, general practitioners, would be placed in the various towns, as outposts of the center. There should be at least two working together, an experienced practitioner and a younger man. There should be at least two, not only to increase the efficiency of the service but also to allow the individual doctor to have regular vacations, to attend postgraduate courses at regular intervals and to do clinical work in the center from time to time.

These doctors, aided by nurses and technicians, would form the local health station, the branch unit of the center. They would work in close cooperation with the center, referring difficult cases to it for examination, sending in patients to be hospitalized, receiving the specialists' help and advice whenever required. One of their most important functions would be to survey the health conditions of their region. They would find in one family that the mother had died of tuberculosis and that the children were menaced. Such a family would have to be watched very carefully. Its living conditions might have to be improved. The children would have to be examined regularly and provisions made to have them spend their vacations in healthy environments, in the mountains or on the seashore. In another family the doctors would find that the father had died of arteriosclerosis, his brother of nephritis. They would know what the weak spot of this family was, and in what direction they would have to concentrate their attention.

Another function of the local doctors would be to enlighten the population in matters of health. They would organize a committee of citizens with which they could discuss the local health problems and on whose cooperation they could rely. They would also take the initiative in organizing a nursery, playgrounds for children, physical culture clubs, and similar institutions. And whatever they undertook they would always feel that they were strongly backed by the health center. Regular conferences would bring the doctors together and give them a chance to discuss their experiences.

In the cities, health centers would be established in the various districts and in the larger enterprises, where the workers would be given entrance and periodic examinations, not in order to determine whether they should be employed or not but in order to find out for what occupation they are best fitted. In a highly differentiated society like ours there is a job for nearly every physical condition and grade of intelligence.

Sanatoria for the treatment of tuberculosis, hospitals and labor colonies for mental patients, and health resorts for the treatment of chronic diseases would be established at strategic points and would receive the patients assigned to them by the various health centers.

Under such a scheme the central health authorities, state and federal, would have a great task to fulfill. They would be responsible for the people's health. They would issue policies, would coordinate the efforts of the various local groups, would encourage research and work out methods for the application of the results of research on a nationwide scale.

If medical care is to be available to all, it must be free of charge, like education. Physicians and other medical personnel would receive salaries, the amount of which would be determined by experience and responsibility.

I think there is no need to go into further details. Sketchy as this outline is, it has made clear what type of medicine I have in mind. It is socialized medicine, a system under which medical care is not sold to the population or given as a matter of charity. Medical care under such a system has become a function of the state, a public service to which every citizen is entitled. It is a system that allows the practice of preventive medicine on a large scale and makes it possible to apply all resources of medical science unrestrictedly.

Such a system may seem Utopian, but it is not. It actually is in operation in one sixth of the inhabited earth, in the Soviet Union. Russia was the first country to establish a complete system of socialized medicine and did it under incredible difficulties, when the country was almost totally wrecked. In 1918, the Commissariat of Public Health was established and the work of construction began systematically. Hospitals, sanatoria, health centers were erected all over the country. New medical industries had to be created. The number of physicians was increased five times. New medical schools and new schools for the training of nurses and other personnel were built. The guiding principle of Soviet

medicine is to create the best possible working and living conditions, to provide the best facilities for rest and recreation, and to protect people medically from the moment of conception to the moment of death.

The Soviet Union still needs 70,000 more doctors, hundreds of thousands more nurses, and a great deal of additional equipment, but the system of socialized medicine that has been applied is sound; it works and, in the short period from 1913 to 1936, it has produced remarkable results. According to figures given in official Soviet sources, the general death rate dropped from 30.2 to 11.2 for every 1000 population, infant mortality was reduced by more than fifty per cent, while the death rate from pulmonary tuberculosis—still a serious problem in the U.S.S.R.—was reduced by one half. Great progress was made in combatting venereal diseases. The incidence of primary syphilis decreased from 25.7 per 10,000 population to 1.8 in cities and from 2.66 to 0.62 in villages. Cholera, a dreaded scourge in tsarist days, has been almost overcome since 1927. Trachoma, a contagious eye disease that was very widespread among the national minorities and was responsible for thousands of cases of blindness, decreased considerably, and much progress was made in combatting malaria. In a country like Russia such results would have been inconceivable under any other medical plan.

We must now discuss the question whether a system of socialized medicine could be developed in the United States, where the social and economic structure of society is so completely different from that in the Soviet Union. First of all, we must remember that today medical care is given to the people not only on a fee-for-service basis but under a variety of systems. There already is a large amount of state medicine in America. From modest beginnings in 1798, the Marine Hospital Service has grown into the United States Public Health Service, which together with the state and municipal services is constantly expanding. In former years, the task of the public health services was limited. It consisted mostly in protecting the country against communicable diseases that might invade it, in creating sanitary living conditions, and similar tasks. The measures applied were meant to protect society as a whole.

In the last twenty years, the public health services showed a definite tendency to get closer to the individual and to perform not only preventive but curative functions as well. There were not enough charity wards in private hospitals to admit the mass of indigent patients. Public hospitals were erected in increasing number, and today more than sixty per cent of all hospital beds are owned and operated by the government.

Who else could have taken care of the thousands of tubercular and mental patients, the crippled, the blind, and otherwise handicapped people? And when new tasks became urgent the government again had to step in and to establish services for prenatal and maternity care for the protection of infants and school children. Today only one tenth of the work performed by the public health services is devoted to the traditional tasks such as control of water supplies, sewage systems, quarantine and so on, and nine tenths of the work consists of new tasks which private medicine was unable to fulfill. Why not continue in this direction and satisfy further and not less urgent needs? Why abandon the child when it leaves school? Doesn't the adolescent need medical advice more than anyone else? In Moscow and several other Russian cities every boy and girl on entering a higher school is given not only a physical but also a mental examination. The idea is to bring the young student in touch with a psychiatrist whom he can consult later should he ever be in trouble and require psychological advice.

Why should the public health services not go still further and extend their care to the adult men and women in their working places? New dangers menace their health once they have joined in the process of production and private medicine can satisfy their needs only to a small extent.

Many of our medical schools are operated on public funds. Nobody can deny that schools such as those of the universities of Wisconsin, Michigan, Minnesota, California, to mention only a few, compare very favorably with the best privately endowed institutions in the East. Medical research is carried out in these schools on public funds. The health departments of many states have become important centers of scientific investigations and research has become an increasingly important function of the federal public health service. The National Health Institute has made many valuable contributions and a new cancer research institute is in process of organization.

The government has demonstrated that it is able to educate physicians to carry out research and to give efficacious preventive and curative services. Why not expand these functions gradually so as to reach ever wider groups of the population? The American Medical Association is perfectly willing to let government agencies care for the indigent sick so that the private practitioner would be relieved of charity work. We discussed before, however, that not only the totally indigent but all the low income families need more and better services, which they are un-

able to purchase. Why shouldn't public services reach this group also? Once this were done, the great majority of the population would be served by public agencies, and medicine then would actually be socialized.

The New York State Medical Society, in its declaration of principles published last spring, stated emphatically that "the health of the people is a direct concern of government." This statement was repeated in the much-discussed manifesto of four hundred and thirty leading physicians issued last November. The government had accepted this view long before and had formulated it in a bill providing medical care to the unemployed. If the government is to be responsible for the people's health, it must necessarily be able to control health activities. Nobody can possibly be made responsible for matters that escape his control. The medical profession is afraid of government competition, justly so. Government services are coordinated and organized and therefore obviously more efficient.

It is generally felt that the health problems of the nation cannot be solved in a haphazard way, and there is a growing demand for a national health policy. Such a policy, however, requires centralized direction. Unity of command is necessary to win a war. If health work is to be planful, there must be a planning agency and an organization able to carry out plans once they have been accepted. No group, however, has such an organization except the government.

Would it be possible to finance a system of socialized medicine in this country? We know that the American people spends at least three and a half billion dollars each year for medical care, less than half of what it spends for automobiles, and somewhat more than it spends for tobacco, confections, ice cream, and soft drinks. These three and a half billion dollars are spent in a haphazard and wasteful way, with the result that one third of the population has no, or not enough, medical care. If the same amount were spent rationally, little more would be required to provide adequate medical service for the whole population.

How could this money be collected so as to be distributed planfully? In various ways. At present, a large volume of medical care is financed through insurance as a result of the Workmen's Compensation Act. A system is conceivable under which public agencies would care for the totally indigent, while the low-income group would finance its services through compulsory insurance. The five per cent of families with higher income would take care of themselves in the way they pleased.

Health insurance was the solution of the medical problem sought by the industrial countries of Europe. Towards the middle of last century the number of indigent sick had increased so considerably that it was impossible to give them medical service on the basis of charity. In Russia, where the indigent population was mostly rural, a system of state medicine financed through taxation was introduced in the rural districts as early as 1864. This so-called *Zemstvo* medicine was inadequate in quantity and in quality, but it was a great step forward in the right direction and brought medical care to millions of people who had never seen a doctor before. In the western European countries, where the indigent population was mostly industrial, compulsory health insurance for wage earners was introduced, in Germany first in 1883, and then gradually in most other European countries.

Health insurance was not the ideal solution of the medical problem, but it contributed a great deal towards improving health conditions and no European country could possibly afford to abandon it. All European systems, however, have very serious drawbacks. Mistakes were made which must be avoided if this country is to follow a similar policy. In Germany the doctors refused to be salaried employees of the Sickness Funds. They insisted on being remunerated on a fee-for-service basis. Therefore not only the patients but the physicians had to be controlled by the Funds, which could not afford to pay for unnecessary services. The result was that the Sickness Funds were invaded by a heavy and wasteful bureaucracy. The English system, according to which the doctor is remunerated on a capitation basis, has led to a cheap type of bottle practice, and for the premium he pays the insured patient receives only general medical care. In France the medical profession has succeeded in sabotaging health insurance so successfully that a terrific wastage resulted.

All European systems embrace only employees whose income does not exceed \$1000 or \$1200. In most countries the small independent farmer is not included, as it obviously would be difficult to collect premiums from him. These various systems, therefore, do not solve the health problem of the middle class. If we were to adopt health insurance we would have to make it compulsory for all families whose income is less than \$3000 a year, or it would be still better to go so far as to include all income brackets up to \$5000. We all know how difficult it is even in these higher-income groups to budget the cost of illness. To include all families with incomes up to \$5000, however, would be to

include the overwhelming majority of the population, and there is no reason in the world why in such a case insurance should not be extended to the entire population so that the wealthy would contribute to improving the people's health whether they use the services or not, just as they contribute towards education even when they send their children to private schools. Just as an educated population benefits the propertied class, so does a healthy population, and it is mere justice that all citizens should contribute to the common welfare according to their ability.

Health insurance, compulsory for the entire population, would necessarily lead to a complete system of socialized medicine, and it would make little difference whether we called the contributions to be paid by the individual families a premium or a tax. Taxation would seem the more logical way to finance medical service because, in times of depression, government would have to mobilize other sources of income anyway.

I know what the traditional objections to socialized medicine are. We frequently hear that such a system would lead to "regimentation," while the word that applies to it is "organization." Why should anybody feel regimented by having the possibility to budget the cost of illness and by having the privilege to receive all the medical care he needs? We do not feel regimented when we send our children to school, or when we appeal to a court to protect our rights and our honor, or when we call on a minister of the church for advice without paying him a fee. Nobody would be compelled to seek treatment, and if a man particularly enjoyed his arthritis he would retain the liberty of having it. Conditions are different in the case of communicable diseases where a sick man is a direct menace to his environment. This has been recognized long ago, and society has made provisions to isolate, as much as possible, the contaminated individual. In several countries, the spreading of venereal diseases is considered a criminal offense and is prosecuted by law. There is a duty to health because the sick man is useless to society and often a burden, but it is a moral, not a legal, obligation. Gradually we come to recognize that health is much more than the absence of disease, that it is something positive, a joyful attitude towards life.

Another objection frequently heard is that doctors, if they were salaried and had not the incentive of making money, would neglect their duties. I think that such an assumption is an insult to the medical profession, and it is very queer that this objection is frequently made by medical organizations. The code of ethics of the American Medical

Association explicitly states that "a profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration." Can a doctor wish for more than to be given complete social security and to be able to devote all his time and all his energy to his patients without being obstructed by economic barriers? I have not been in practice for a long time, but for seventeen years I have helped to train physicians and I have kept in close touch with many of my former students, who are now practicing in cities and in rural districts. More than once they have come to see me in despair because they were unable to practice the type of medicine they had been taught. Economic considerations compelled them to lower their standard and to compromise. Every young doctor knows of such conflicts, and many of the best minds go into public health service because they refuse to be dragged into business. If a man's ambition is to become rich, he should not enter the medical career—one of the most harassing professions, in which very few people ever became wealthy. Thousands of doctors work on salaries at present, and nobody can deny that they are doing a good job. And whenever a position is vacant hundreds apply for it, so that the idea of being salaried cannot be quite unattractive. Under socialized medicine, there would be plenty of incentive for the doctor. He could rise to positions of greater responsibility, and his income would increase accordingly.

Many people are afraid that under socialized medicine the free choice of a physician would be somewhat limited. They insist that everybody should be able to select the one doctor in whom he has greatest confidence. There can be no doubt that confidence is an essential factor in the relation of doctor to patient. The elder Seneca said: "Nihil magis aegris prodest quam ab eo curari a quo volunt" ("Nothing is more advantageous to invalids than to be cared for by the person they wish"). We must not forget, however, that our present system allows only very few people to choose their own doctor. The dispensary patient has to accept whatever doctor happens to be there. In most rural districts only one or possibly two physicians are available, so that the patient has practically no choice, and even those patients who in the cities could make a wide selection very often call on the neighborhood doctor, whoever he may be. It is very difficult for a layman to pass judgment on the competence of a physician. If medicine were socialized, the free choice of a doctor would possibly be somewhat more limited than it is today, but the physicians, being members of an organization, would be under a certain control.

They would have ample opportunities for postgraduate training, and incompetent elements could be eliminated—which is practically impossible today. Medical science, moreover, has progressed so much and has developed so many objective methods of examination, and the general standard of the medical profession, on the other hand, has been raised so considerably in the last decades, that a man need not be a genius to be a competent doctor.

Everybody agrees that the personal relationship between physician and patient must be preserved. The patient does not want to consult a committee when he is in trouble, nor can medicine be practiced by a corporation. The patient will always call on one doctor and open up his heart to him, but the fact that this doctor is a member of an organized group from which he can seek help and advice does not spoil the relationship. What spoils it today is that the doctor has to charge a fee for each individual service and that the patient has to pay the bill. Once the money question is removed, the relationship between physician and patient becomes purely human. The value of a commodity can be estimated pretty accurately, while it is humanly impossible to estimate the value of a medical service in dollars and cents. Advice given by a doctor in a half hour's conversation may have tremendous repercussions in a man's life, while a major operation may be entirely worthless. If we remove the doctor from the economic struggle, we set him free and allow him to practice what medical science has taught him.

It is not enough to provide medical care for everybody. Not only the quantity but also the quality of service matters a great deal. Many people fear that socialized medicine would lower the standards by developing a certain routine. I cannot share these apprehensions. If we look around today we soon find that the quality of service given to most people is rather inferior, to put it mildly. Necessary examinations and treatments are not made because the patient cannot afford them. Postgraduate medical education is in its infancy. The highest type of service is given in hospitals, wherever the doctors are members of organized groups. This, however, is just what socialized medicine tends to develop. It endeavors to bridge the gap that exists today between individual and hospital practice by bringing the general practitioner into close contact with a health center.

The most serious objection to the socialization of medicine in America is that government control would necessarily bring politics into the medical field. Political corruption has been observed more than once in

the past, and it obviously would be a catastrophe if appointments were made not according to merit but according to political considerations. The whole system would be wrecked if entire staffs were dismissed and replaced whenever a new party came into power. Corruption may occur in certain government activities, but this does not mean that graft and administration are one. Political interference can be opposed by public opinion and, as a matter of fact, has been opposed successfully more than once. Nobody can deny that our United States Public Health Service is clean and most competently and efficiently administered. More than one state and city have succeeded in keeping their health departments free of politics. In the period of transition in which we are living government will have to take over many functions of society that could not be performed otherwise, and if the country wishes to progress in an evolutionary rather than in a revolutionary way it will by necessity have to amend its political manners. Graft and corruption discredit the democratic form of government and pave the way to fascism. To fight them relentlessly is to fight for the cause of democracy.

The average citizen is not vitally interested in the construction of highways and bridges, but he is highly concerned about his and his family's health. Political corruption in the medical field would not be tolerated; it would be opposed by public opinion in the strongest possible way. It is, therefore, quite conceivable that the socialization of medicine would not only bring health to the people but also improve our political conditions.

Fifty years ago American medicine hardly counted in the world. It has assumed a position of leadership today. Splendidly equipped technically, it is still backward socially, and it would be a tragedy to see medicine wrecked by its own progress. Millions of dollars are spent every year to increase our knowledge of disease. It is time that we learned to apply whatever knowledge we have. And this requires courageous and unprejudiced thinking. A new frontier has been opened up to the medical man, and pioneers are wanted.

AN INTRODUCTION TO THE ECONOMICS OF MEDICINE

I N the last hundred years medicine has progressed more than ever before. Improved microscopes and microscopic techniques have made the investigation of cellular structures possible. Physiology has been revolutionized by the progress of physics, particularly of electricity and optics, and by the development of organic and physical chemistry. The new physiology has created a new experimental pharmacology and a new scientific hygiene. The discovery of hormones and vitamins has opened up new horizons, and today physiology is the backbone of every medical discipline.

Pathological anatomy has become cellular pathology, and this new principle combined with new instruments has been applied to a study of

In October 1940 Dr Sigerist began a plan to write a book entitled *Introduction to the Economic Problems of Medicine*. In his diary for December 2, 1940, he wrote: "For the next eight months I will be a slave to this book, but the subject is important. On February 10, 1941, the diary says: 'I am writing my book not only for the United States and South Africa, but for Europe as well. After the war all countries will be forced to reorganize their medical services and a book like mine will probably be very useful.'"

But the demands of many other duties during World War II intervened, and by July 1941 Dr Sigerist decided he had to abandon the project. The introductory pages, however, had been written. They were based largely on a series of lectures delivered at the University of Witwatersrand, Johannesburg, South Africa, in 1939, and the book was to be dedicated to the medical graduates of that university, South Africa's promising young medical generation.

Taken from a manuscript found among the Sigerist papers, this text has not been previously published. It includes the opening forty-four pages of the manuscript, with occasional ellipses where the text was incomplete. A section of further, but still unfinished, introductory text on the incidence of illness is available in manuscript form in the Historical Library of the Yale Medical School, New Haven, Conn.

diseases of skin, eyes, ears, and other organs and has created new specialties. The triumphs of bacteriology have not only revolutionized public health, surgery, and obstetrics but have had strong repercussions in every field. Pathology, no longer confined within anatomical barriers, has broadened considerably and developed into pathological physiology.

New diagnostic methods, anatomical and functional, such as the application of X-rays and electrocardiography, allow a sharp analysis of a patient's condition. A new clinic has developed, based on clinical observation, and the laboratory and new methods of treatment permit cure of diseases which were deadly before. Increased attention has been given to psychological factors, and psychiatry has begun to be scientific.

As a result of these developments, the incidence of disease has changed completely. Many communicable diseases have been wiped out entirely—at least in the civilized countries of the West—others have been driven into the background. Infant mortality has been reduced considerably, and the average life expectancy has increased. Life is infinitely less hazardous today than it was a hundred years ago.

And yet, in spite of all this great and undeniable progress, every country still carries a large and heavy burden of illness, most of which is quite unnecessary. In every country thousands of people die prematurely from diseases that could have been avoided. Physicians, well trained in scientific medicine, know what should and could be done to prevent and cure diseases and yet find themselves unable to apply their knowledge. Medicine today has infinitely more to give than the people actually receive.

This is a paradoxical situation which can only be improved if we are aware of its causes. For a long time it was assumed that all that was needed in medicine was scientific knowledge. It was tacitly taken for granted that, once we knew the cause of a disease, its mechanism and cure, the disease could be overcome, or at least lose its significance. Nobody will deny that knowledge is essential. The more we know about a disease, the more effectively we can attack it. But knowledge is not all. Unless we are able to apply it in prevention and cure, we shall never reach our goal and our knowledge will be wasted as far as medicine is concerned.

In the practical application of medical science we encounter numerous difficulties caused by nonmedical factors.¹ The physician is inclined to overlook them, and yet there can be no doubt that they are extremely

¹ H. E. Sigerist, "Soziologische Faktoren in der Medizin," *Zeuge Festschrift*, Zurich, 1934, pp 749-756.

important and largely determine success or failure of our efforts. Whether a given society is willing and able to accept the advice of its physicians depends to a very large extent on its religious and philosophic views, on its social and economic conditions.

If the educational standard of a society is low or if large groups are denied educational facilities altogether, we cannot expect any response to public health measures. Education is the iron foundation of all health activities. Without it all efforts are wasted, and history teaches us that the educational ideal of a given period has a profound influence upon its health work. When education tends to develop a harmonious being, perfectly balanced in body and mind, the physicians have an easy task. It becomes extremely difficult, however, whenever the purpose of education restricts itself to the development of man's intellectual faculties and neglects physical qualities.

Religious views determine to a large extent the attitude of society toward the human body and its evaluation of health and disease. Tuberculosis and syphilis are both fought as social diseases. It is relatively easy to attack tuberculosis, but the combatting of venereal diseases is extremely difficult whenever society holds puritanical views which make it almost impossible to oppose the diseases openly. Religious, not medical, considerations still determine many people's attitude toward contraception, abortion, sterilization, and similar procedures.

The political philosophy of a nation has a deeper bearing upon medical matters than is commonly assumed. If the underlying philosophy is rational, medical science has good chances of developing. If the purpose of the state is the promotion of individual welfare, attention must be paid to the protection and restoration of the individual's health. History has demonstrated this unmistakably from the seventeenth century on. When, on the other hand, a nation rests on the foundation of a mystic philosophy, medicine is confronted with considerable barriers. Medicine is a rational science. *Experientia ac ratio*, to quote a Paracelsian phrase, are its guiding principles, and it cannot be advanced by lofty speculations. And, whenever the purpose of the state is the attainment of some mystic goal, the individual is paid attention only insofar as he can serve the purpose. Such an attitude must of necessity reflect itself in the health work of a country.

The most influential of all nonmedical factors that determine success or failure of the physicians' work, however, is undoubtedly the economic. Sickness not only creates suffering but is an economic loss. The sick man

cannot work and therefore loses his wages. Illness frequently disables a man permanently or for a long time. He becomes unemployable, and the result may be that a whole family drops in the social scale. Thus illness creates poverty, which in time creates more illness. Sickness, however, affects economically not only the sick man and his family but society as well, in that it deprives it of the diseased citizen's labor power temporarily or permanently. In every country thousands of people die prematurely every year, without necessity, from diseases that could have been prevented or cured. Every such case is a capital loss for the nation.

Disease thus interferes directly with the economic life of society by destroying labor power and the means of subsistence of individuals and groups. The loss is increased when society has to provide funds to support the victims of illness. A large percentage of all relief money is spent for the support of people who have become indigent as a result of illness.

Many diseases can be prevented, and many can be cured. But prevention and cure cost money. Society must provide a living for physicians, public health officers, dentists, nurses, and other medical personnel. They all have to be trained in costly institutions. Large sums of money must be expended on research to increase the knowledge that allows them to act effectively. The hospital plays an increasingly important part in all aspects of medical care, and its cost has risen considerably. Finally, medical commodities are needed, drugs and appliances.

Some medical care is bought collectively on public, charitable, or philanthropic funds. But most of it must be purchased by individual patients. It is perfectly obvious, therefore, that medicine cannot reach its goal and that the population cannot obtain the medical services it needs whenever there is a discrepancy between the cost of medical care and the purchasing power of the people.

We are in such a situation today. It is not new. I should think that at all times the cost of medical care has been beyond the capacity of large sections of the population, too large to be attended by charitable services. But we feel more strongly on the matter today because we live in a highly specialized industrial society that requires healthy individuals for its total functioning and, also, because we have learned to look at the problems of illness not only from the humanitarian and scientific but also from the economic angle. We are aware of the fact that the illness of one member of society is a loss to all and that the volume of illness a society carries is a wasteful burden.

There is no doubt that the situation is more acute today than in for-

mer centuries. As a result of the fabulous progress of medical science in the past hundred years, the cost of medical care has increased much more rapidly than the purchasing power of the average family. The technical progress of medicine has raised the cost of production of medical service. In order to become a physician a man has to study about ten years and, in America, has to invest a capital of from \$15,000 to \$20,000. If he wants to practice scientific medicine, he needs very costly equipment, instruments, and appliances and requires the facilities of a hospital and the advice of specialists.

Although the cost of medical care has increased, wealth has increased also in the western world. New industries have created employment for millions of people. A higher standard of living has become possible for larger groups than before. But the distribution of wealth has been very uneven. The concentration of capital is a process that is still going on and that is accelerated by every economic depression. In 1929, a year of unheard-of prosperity, when the American national income amounted to 79.2 billion dollars, family incomes were the following:²

Income group	Families	
	In thousands	Per cent
Under \$1000	5,899	21.5
\$1000-2000	10,455	38.0
\$2000-3000	5,192	18.9
\$3000-5000	3,672	13.4
\$5000 10,000	1,625	5.9
Over \$10,000	631	2.3
Total	<u>27,474</u>	<u>100.0</u>

In other words, even in the wealthiest country of the world and at the peak of an economic boom, 59.5 per cent of all families had incomes under \$2000 and 78.4 per cent under \$3000.

The economic crisis that set in at the end of 1929 changed the figures very rapidly. . . .

There is another factor that must be considered since it affects the medical situation very strongly. As a result of increasing industrialization the percentage of people making a living through wages has grown

² Estimates of the National Industrial Conference Board from the *World Almanac*; Louis M. Hacker, Rudolf Modley, and George R. Taylor, *The United States: A Graphic History*, New York, Modern Age Books, 1937, pp. 173-174. The figures are based on a study of the Brookings Institution but do not include unattended individuals.

considerably. In the United States, a hundred years ago only one out of every five gainfully employed persons was a wage earner or salaried employee, whereas four were independent farmers, artisans, or merchants. Today four out of every five are wage earners or salaried employees.³ In other words, four fifths of the gainfully employed population depend for an income on the labor market. Many families may be able to purchase medical care at times, but they cannot do so in periods of unemployment. This situation is not peculiar to the United States but occurs in every industrialized country. It has introduced a strong factor of insecurity and as a result a growing demand for social security. This is not a cry for paternalism nor an attempt to evade individual responsibility. It is the logical consequence of a system that cannot generate steady employment to all citizens willing and able to work.

From all that has been said, it has become apparent that, in a country like the United States, society, even in a period of depression, is able to meet the cost of medical care. But it can do so only collectively. Millions of families cannot possibly contribute anything directly, and many more millions can contribute only part of the actual cost of the medical services they need. No family can foresee the amount of illness that will befall it, but we can plan and budget with fair accuracy for large groups. The task, therefore, must be to spread the economic risk among as many people as possible and to pool their resources.

There are countries where it may not be possible to provide complete scientific medical services of high quality to every citizen. In colonial countries like South Africa, or semicolonial countries like Mexico, the great majority of the population lives on a subsistence level and the per capita spendable income is so low that the money required to finance a complete service is simply unavailable. In some countries the task must be to provide at least a minimum of medical care to everybody and to increase the services in quantity and quality whenever the national income permits it. It must be kept in mind that every cent spent for the protection and restoration of health actually leads to a saving, in that it increases the productivity and hence the wealth of a nation. Expenditures for health must be considered an investment which ultimately will be self-liquidating. In countries where the general standard of living is low, the organization of medical services is more urgent than anywhere else.

A new medical science serving a new type of society requires new forms

³ Brookings Institution.

of medical service. The problem is world-wide, and every country is confronted with it sooner or later. The same basic force, the rise of science and technology, changed medicine and society. The clock cannot be turned back. We do not wish to close our factories and to return to handicraft production. We are not going to till the soil with hand-ploughs. And we refuse to practice medicine without X-ray machines, microscopes, and test tubes. The division of labor will continue in industry and medicine. We must face the changed conditions whether we like them or not.

One thing is certain, that the *laissez faire* system has failed in the distribution of medical care as it has failed in other fields. This is evidenced by the fact that even in the wealthiest countries large sections of the population remain without adequate medical care, and that billions are wasted through unnecessary illness. There is no escape. We must readjust ourselves and our work to the changed conditions. Medical services must be organized. All health work must be planned. A highly differentiated organism cannot function unless all parts cooperate planfully. Competition must be replaced by cooperation. Rugged individualism under such a plan becomes anarchy. Organization is not identical with regimentation, as some conservatives would make us believe. The contrary is the case. Under any organized medical scheme, the medical worker enjoys more freedom because he is liberated from the necessity of making a living through economic competition. He then can develop and direct his individualism to creative purposes.

When we look at the world around us, we can see that all civilized countries are in the process of organizing their medical services. Some started long ago when they introduced compulsory sickness insurance or public medical service plans. Some have gone the whole way, and others are in the very beginnings. It is a slow process. Progressive and conservative forces have clashed over the issue in more than one country and forced a compromise that was far from satisfactory. But it is a steady process, and the end is apparent because there can be no doubt as to the direction into which society is moving. It may be that there are no short cuts in history, that a goal can never be reached on the shortest way. We should nevertheless endeavor to avoid unnecessary detours and blind alleys.

All social planning requires not only imagination and vision but also knowledge of basic facts. This is where medical economics come in in the health field. In establishing a health plan there are other than fi-

nancial considerations The best economic scheme defeats its purpose if it merely serves to finance a poor type of service It has happened more than once But all plans must take the basic economic facts of medicine into account

The purpose of medical economics is to ascertain the costs of illness to a nation Once the facts are established, then medical economics can proceed to study ways and means to reduce the losses caused by illness In other words, the purpose then becomes to investigate the economic side of the various health service schemes Medical economics then provides the data required for planning activities in the field of health

Medical economics is not a new field In 1873, Max von Pettenkofer, one of the founders of modern scientific hygiene, delivered two lectures on the value of health for a city⁴ He tried to figure out how much the city of Munich lost as a result of illness and how much it could save by improving health conditions The city at the time had 170,000 inhabitants who, on an average, were sick 20 days a year Assuming that the daily loss per patient was 1 florin, the total annual loss amounted to 34 million florins, which seemed a staggering figure in those days The general death rate of Munich was 33 for every 1000 inhabitants whereas at the same time that of London was 22 If it were possible, Pettenkofer argues through improved sanitation to reduce the death rate from 33 to 30, what would the economic consequences be? Only 5100 people would die annually instead of 5610, or 510 less Assuming that there is one case of death for every 34 cases of illness, the total annual saving would amount to 346,000 florins which corresponds to a capital of almost 7 million florins If the city spent that amount for building a new water supply and sewage system, the money would represent a sound investment that would yield a good interest rate And, if Munich succeeded in reducing the death rate to that of London, from 33 to 22, the city would increase its wealth by over 25 million florins

The great development of life insurance during the nineteenth century drew the attention of people increasingly to the money value of human life And when, from 1883 on, one European country after another introduced far reaching systems of social insurance, medical problems had to be approached in terms of economics

In the United States medical economics became acute around 1911, when the first workmen's compensation laws were introduced There was some hope then that it would be possible to take the next step in

⁴ *Über den Werth der Gesundheit für eine Stadt* Braunschweig 1873

establishing sickness insurance. But the country was not prepared for it. The discussion died out around 1920 and was not revived until the depression created a new situation and the Roosevelt administration came with its social security program. Looking back, we can say that it was a blessing that the country did not adopt sickness insurance at the time. There was not enough information available, and it is very likely that the country would have repeated all the mistakes ever made in European systems.

And yet, while the United States was living through a period of unprecedented prosperity, it was felt that the distribution of medical care was far from satisfactory. Even then large sections of the population, urban and particularly rural, had no or not enough medical care. And even in the boom days doctors found it difficult to collect bills. The general feeling crystallized, and action was taken. From 1925 on, a small group of physicians, public health workers, and economists used to meet for the discussion of these problems. A larger conference was held in Washington in May, 1927, and the result was the organization of the Committee on the Costs of Medical Care. It consisted in the beginning of 42 members, namely, 14 private practitioners of medicine, 6 public health workers, 8 representatives of institutions interested in medicine, 5 economists, and 9 persons representing the general public. It published a five year program,⁵ appointed a research staff, and set out on a survey such as had never been undertaken before anywhere. The three major questions that the committee endeavored to resolve were:

1. What data are now available showing the incidence of disease and disability requiring medical services, and what are the established facilities for dealing with them?
2. What do existing services cost the people, and what return accrues to the physician and other agents furnishing such services?
3. What specially organized facilities for medical care serving particular groups of the population may now be found, and how do they compare in adequacy and economy with unorganized services?

The committee's work was financed by eight independent foundations which contributed over one million dollars. The money was well spent. In five years of intensive work the committee produced 28 reports covering wide fields of medical economics, ending up with a summary of the

⁵ *The Five-Year Program of the Committee on the Cost of Medical Care*, Washington, D. C., 1928.

investigations⁶ and with a final report that brought forth definite recommendations.⁷

The Committee not only gave American medicine an infinity of most valuable data, it also stimulated other agencies to undertake surveys of their own fields so as to complete the picture. For ten years a large number of medical organizations went out fact finding. Dozens of reports were published by the American Medical Association, the American Dental Association, the National Tuberculosis Association, the National Bureau of Economic Research, the Milbank Memorial Fund, the Julius Rosenwald Fund, the Metropolitan Life Insurance Company, and others. Under the able leadership of Michael M. Davis, a permanent Committee on Research in Medical Economics was established in New York. It has undertaken valuable investigations, and in 1941 launched the publication of a much needed quarterly journal.⁸

When the evil effects of the depression were increasingly felt, President Roosevelt appointed an Interdepartmental Committee to Coordinate Health and Welfare Activities. New surveys were made by the government, among which the most important was a house-to-house canvass involving several million people to ascertain the extent and social distribution of chronic illness.⁹

In 1938 after ten years of fact finding, a period came to an end when a National Health Conference was held in Washington on July 18-20. What everybody had felt, namely, that the distribution of medical care was utterly inadequate and that the country, as a result, was carrying a heavy burden of unnecessary illness, had now been ascertained. The facts and figures were available. And the time for constructive action had come. . . .

The work of the Committee on the Costs of Medical Care had also repercussions abroad. Most European countries had sickness insurance, but many of them came to realize that insurance alone did not solve the health problems of a nation, particularly when the systems were antiquated and merely served to finance the traditional haphazard type of

⁶ S. Falk, C. Rufus Rorem, Martha D. Ring, *The Costs of Medical Care: A Summary of Investigations on the Economic Aspects of the Prevention and Care of Illness*, Chicago, 1933.

⁷ *Medical Care for the American People: The Final Report of the Committee on the Costs of Medical Care*, Chicago, 1932.

⁸ *Medical Care: Economic and Social Aspects of Health Service*, Williams & Wilkins Co., Baltimore, Md.

⁹ U. S. Public Health Service, *National Health Survey*, Washington, 1939.

medical care. New departures made in the organization of medical services in various countries were a serious challenge to the old established nations. The Soviet Union had socialized medicine in all its aspects, and whoever took the trouble to study the Soviet system seriously and without prejudice could not deny that it brought more medical care to more people than any other system, that it not only worked but was a tremendous promise for the future. The fascist countries preparing for war were making a great effort to bring up a healthy and sturdy generation. Germany was embarking on a great eugenic program.

Every country was forced to revise its health policies to survey or re-survey the field. In France, where institutions had become particularly rigid, the popular front government in the short period of its existence had created some new starting points. In South Africa it was recognized that a small European minority could not be kept in good health as long as it was surrounded by a large non-European majority that was ridden with disease. Efforts were made to improve the situation, and various plans were under discussion. But it soon became apparent that no sound program could be worked out before sufficient information had been gathered about needs and resources.

At the International Conference on Social Medicine held in Liege in June, 1939, the cost of illness was one of the major topics of discussion. I have no doubt that medical economics will be paid increasing attention in the future. The war that broke out in 1939 will not only change the general social and economic structure of most European countries but will also call for adjustments in the distribution of medical care. This great work of reconstruction will require knowledge of the basic economic aspects of medicine. . . .

THE PLACE OF THE PHYSICIAN IN MODERN SOCIETY

THE place that the physician holds in a given society is determined by a variety of factors of which the most important are the social and economic structure of that society, the valuation of health and disease by that society, the tasks it sets to its physicians, and finally the technology of medicine available to the doctors in such a period. These factors have changed a great deal in the course of time and so has, consequently, the position of the physician. If we wish to obtain a clear picture of the place that the doctor occupies today in our modern industrial society, the best we can do is give a brief analysis of developments so that we may see the physician against the background of history.

In primitive societies the sick man is an individual who is out of harmony with the forces of nature and of society. Disease is frequently considered a social sanction, and the patient is the innocent or guilty victim of evil magic, of the wrath of spirits, or he is punished by the benevolent deity for an offense. The medicine man holds an extremely important position in primitive society and is infinitely more than the ancestor of the modern physician. He is actually the ancestor of all our

.....

In the postwar period (World War II), interest in winning the four freedoms for which the war had been fought ran high. Everywhere discussions were held on national planning for better health. This paper was Dr. Sigerist's contribution to one such discussion, a Symposium on Present Day Social and Economic Aspects of National Health at the meeting of the American Philosophical Society, held on April 18, 1946. The paper was published in the *Proceedings of the American Philosophical Society* 90:275-279, September, 1946.

professions, is priest, sorcerer, physician in one and very frequently the chief, the judge, and bard of the tribe.

In the Semitic civilizations of the ancient Orient the view had crystallized that disease, like suffering at large, is a punishment for sin, for a sin of the individual, of his parents or his clan. The patient atones by suffering, and where such a view prevails his position in society is burdened with an odium, the odium of sinfulness, a view that may still be encountered as a prejudice in our modern society, particularly in the attitude of certain groups toward mental and venereal diseases. In Babylonian and related societies the physician was a priest, as a rule, whose primary function it was to interpret omens so as to know the intentions of the gods, and to placate them when they had been provoked. The fact that he was a priest determined his position in society.

Conditions changed radically in ancient Greece, a world of the healthy and sound in which health was considered one of the highest goods and disease a great evil that made man inferior. It was considered senseless for the doctor to give his services to a hopeless patient since the goal, recovery, could never be reached. The best course to take with weak and crippled infants was to destroy them, since they would never be able to become normal human beings. The Stoics endeavored to overcome these views by declaring health and disease *adiaphora*, matters of indifference. But in the course of time even they had to make concessions to the generally accepted views, and they differentiated between desirable *adiaphora*, such as health and wealth, and undesirable ones like disease and poverty.

The Hippocratic physician was a craftsman like the shoemaker, the blacksmith, or the artist, and this determined his place in society. He was educated like other craftsmen by being apprenticed to a master whom he served for a number of years until he became a master himself. Most Hippocratic doctors practiced their craft as itinerants, traveling from town to town, knocking at doors, offering their services, and, if there was enough work for them in a given place, they rented a shop, the *iatreion*, to which families brought their sick for examination and treatment. Only large cities had permanent physicians, and, from the sixth century B C. on, municipalities tried to attract a physician by offering him a salary that was raised through taxation. But the majority of all physicians practiced as itinerant craftsmen selling their services on the open market to whoever could afford the price. People who could not purchase medical care had no attention, a condition that was generally

accepted. As the Hippocratic physician worked for money, his social position was not very high in a society that despised the earning of money. Yet among the craftsmen the doctor was one of the most highly esteemed because health was greatly valued.

Again a radical change was effected with the advent of Christianity that came into the world as the joyful gospel that promised healing and redemption. The world was sick and in need of help, and the new religion promised healing, both spiritual healing and physical restoration. Had not Christ himself performed many cures? Christianity was in competition with the ancient healing cults and won out ultimately because it was not a religion that addressed itself only to the pure and righteous but had a strong appeal to the sick, the sinner, to the slaves, and all the downtrodden. In Christian society the sick man was no longer burdened with the odium of sinfulness or inferiority; he was, on the contrary, given a preferential position, and it was declared the duty of the community to help and attend the sick and the poor. Whoever joined the Christian community became the member of a family with all the rights and duties of such.

The physician of the early Middle Ages was a cleric, as a rule, and was thus economically independent of his patients so that he could practice medicine as a divine mission or as a charitable service. In the later Middle Ages, when an increasing number of laymen entered the profession, many of them still remained economically independent, having salaried positions in the service of municipalities or as physicians-in-ordinary to a nobleman, lay or ecclesiastical. But even those who were engaged in what we would call private practice were bound by the rigid regulations of the medical faculties that exercised very much the same control over the physicians as the guilds did over the craftsmen, transmitting an accepted body of knowledge and skills, setting standards, and eliminating competition by prescribing the physician's actions, determining fees, and similar measures. The Middle Ages had a well-integrated system of medical care. The view was generally accepted that everybody, whether rich or poor, high or low, should have all the medical services he needed, and the physician was in a position that permitted him to give his services to all without economic barriers. He was a scholar trained in the universities and was greatly respected.

Conditions changed again when in the sixteenth century a new economic order developed that appealed to the individual in man and called for free competition and free initiative. The traditional authorities were

fought. The highest authority, the church, was reformed. The power of the guilds was broken, and, since the medical faculties of the universities remained medieval in character, academies were founded where the new science was cultivated. Medical colleges were established in several countries that granted the license to practice, a privilege that had been reserved for the universities in the past. Professions were no longer divine missions but became in increasing measure the means of making a living. The day came when the physician found himself in a competitive world that was very foreign to his traditions, in a society that was still upholding the view that medical care should be available to all, a society, however, in which he, the scholar, was supposed to sell his services as the Hippocratic craftsman had done, in order to make a living. For many centuries the physicians did their best to escape from the necessities of this new competitive world. The ambition of a doctor in the seventeenth, eighteenth, and, in many countries, far into the nineteenth century was to have a salaried position in the service of cities or as body-physician. With the rise of the middle class, doctors became physicians-in-ordinary to a number of middle class families who at the end of the year paid them an amount of money that was considered fair and that they could afford. The family doctor is the democratic form of the court physician and a product of the emancipation of the middle class. In spite of all efforts to resist economic developments and to evade them whenever possible, preserving medieval traditions in a rapidly changing world, the doctor could not prevent being engulfed in a world that was ruled by iron economic necessities. And all he could do then was to organize medical societies that promulgated codes of ethics and etiquettes, the purpose of which was to protect the profession from some of the worst abuses of competitive business.

§

Against this background of history we may attempt to define the place that the physician holds in our modern industrial society. First of all, we realize that health is valued very highly today. We are convinced that a modern democratic society cannot function unless its members are educated, and we therefore make education available to all the people as a public service. Similarly we believe that society cannot function unless its members are in good health. The sick individual drops out of society, so to say, becomes unemployed, and may even become unemploy-

able if a permanent disability results from his illness. Our tendency therefore must be to provide complete health services to all the people irrespective of race, creed, economic status, and irrespective of whether people live in town or country. The old medieval view that the community has a responsibility toward its members is still fully alive. It was originally motivated by charity, became humanitarianism in the eighteenth century, and in the nineteenth century there was a good deal of sound utilitarianism involved. It was realized very justly that sick groups of the population are a menace and a burden to all.

Gradually the view crystallized that the member of a modern state may claim a right to health or rather, since health cannot be guaranteed, a right to have all means for the protection and restoration of health made available to him. This view was clearly formulated a hundred years ago when a great medical reform movement swept over Europe. A German, S. Neumann, in 1847 in a book entitled *The Public Health and Property* pointed out that the state had as one of its purposes the protection of the people's property, that the majority of people, however, had only one possession, their labor power, one which was entirely determined by their health. He therefore concluded that the state had the duty to protect the people's health as their most valuable property. If the purpose of the state is to promote the general welfare of the people, then there can be no doubt that the protection of health must be one of the primary concerns of government.

When we look at the task that modern society has placed in the hands of its physician, we soon find that the scope of medicine has broadened tremendously. From a private relationship between two individuals, medicine is rapidly becoming a social institution. It is one link in a great chain of social welfare institutions. Medicine, usually regarded as a natural science, actually is a social science because its goal is social. Its primary target must be to keep individuals adjusted to their environment as useful members of society, or to readjust them when they have dropped out as a result of illness. In combatting disease the physician uses methods of the natural sciences every day, but to a social end.

For thousands of years the treatment of the sick was considered the primary task of medicine while today its scope is infinitely broader. Society has given the physician four major tasks, which, although they can hardly be separated since there are no sharp borderlines, yet may be discussed separately for simplicity's sake. The first task, and one of the most important today, is the promotion of health. Health cannot be

taken for granted. It must be maintained and promoted through incessant activities in which the physician shares with a great many other workers. Education, general education and health education, represent the starting point of all health activities, and the school undoubtedly is one of the most important public health institutions. Health is promoted, furthermore, by our developing a program of physical culture that must reach all groups of the population and all age groups. Physical education does not consist of competitive and commercialized athletics but is primarily an attitude toward health, the creation and satisfaction of a need for organized physical exercise that will benefit the general condition of an individual's health. Another important field in the promotion of health and one in which we still lag behind is the provision of means of rest and recreation. Labor power spent in the process of production must be restored. Periods of work must be followed by periods of rest, and this rest should in certain cases be under medical supervision. In handling our automobiles we have learned that it is cheaper to have them overhauled periodically and to have minor repairs made before the car breaks down. A program of human conservation would make use of the same principle. The promotion of health moreover requires the provision of a decent standard of living with the best possible living and labor conditions. The promotion of the people's health is undoubtedly an eminently social task that calls for the coordinated efforts of large groups, of the statesman, labor, industry, of the educator, and of the physician who, as an expert in matters of health, must define norms and set standards.

By promoting health society prevents illness, yet special measures of prevention are needed to protect society against communicable diseases through the sanitation of dwelling places, quarantine, immunizations, the finding, segregation, and treatment of individuals who, suffering from communicable diseases, are a menace to their fellow man. These are the classical tasks of the public health services which in all countries had a great development during the past hundred years. These are tasks of such magnitude that they cannot be carried out without the state power. Thus an extremely important medical function has become part of the administration of the state, and the physician functions in it as a civil servant.

The effective prevention of illness, however, requires in addition special organizations and services for the protection of those groups of the population that are particularly threatened, either physiologically or

socially. Especially menaced for physiological reasons are women in pregnancy, childbirth, and childbed, are infants, young children, and aged people. Socially threatened as a result of their occupation are industrial workers. Society, therefore, called upon the doctor to develop special methods and institutions for the protection of mother and child, for the care of the aged, and for the protection of labor. This, however, also requires group activities and is thus an eminently social function.

When the promotion of health and the prevention of disease have broken down and an individual has fallen ill, then the physician's immediate task is the restoration of the patient's health. Uncomplicated as the relationship between physician and patient may appear, yet it also includes strong social elements. In taking the history of a patient, the physician endeavors to obtain a picture of his living and working conditions, of his relationships to the family and other social groups, because the illness may have been caused directly or indirectly by a wrong mode of living or by social maladjustment. The doctor is an individual, to be sure, but is at the same time also a member of society who, in the patient, treats another individual who is also a member of a group. Treatment may consist in the correction of a social relationship.

From all that has been said, it is apparent that the physical restoration of a patient cannot be the final goal of the physician's actions. No task may be considered completed before the patient has been rehabilitated, reintegrated into society as a useful member. A highly specialized and technical society such as ours has jobs for every degree of intelligence and physical capacity. Even the most disabled individuals, blind men, people who have lost extremities, and other invalids, can perform socially useful and therefore necessary work that deserves to be fully remunerated. Work is one of the most powerful factors of health, and society should make every possible effort to prevent skilled workers from dropping into the ranks of the unskilled laborers as a result of physical disability. With our present advanced technology, people with every degree of disability can be retrained in such a way that they will be able to fulfill useful work that will permit them to maintain their self-respect as well as their economic status. In times of war, society is more strongly aware of its responsibility toward the men who sacrificed their health for its protection, and a great deal of rehabilitation work is performed very successfully with war veterans. The battle against disease and its dire consequences, however, is one that knows no armistice, and we therefore must provide training centers for the rehabilitation of civilians also. The

Soviet Union has set a great example to the world in demonstrating how physically handicapped individuals can perform highly skilled work in factories. Under a system of free competition, in periods of economic crises, it may be difficult to provide work for the disabled, but if private industries cannot provide the necessary work government projects will have to do it.

Thus the scope of medicine has indeed broadened considerably, and nobody will deny that the physician is playing an increasingly important part in society. His services are called upon by a great many other groups. He has become the adviser to the educator, and mental hygiene, in its beginnings yet, may prove to be a powerful method of preventing maladjustments in growing individuals and may thus be able to prevent not only disease but also crime. The physician is furthermore adviser to the court. The administration of justice would be impossible without his services. As scientific expert, he must determine the cause of death and the circumstances under which death occurred. As psychological adviser to the court, he must determine the responsibility of an individual under indictment, and more and more frequently is he consulted in determining whether a sentence is apt not only to punish but to rehabilitate a criminal and to readjust him to society.

Since poverty is still the major cause of illness in every country and the general standard of living is perhaps the most influential factor of health, the doctor's advice is requested by the statesman in problems of housing, nutrition, and an infinity of other questions where he has to establish the norms and standards that are conducive to health.

When we now look at the modern technology of medicine, we realize that tremendous changes have occurred, particularly during the last hundred years, as a result of the great development of science. Until a century ago the technology was very simple. The content of medicine could be assimilated in a few years of study. Methods of examination were uncomplicated and required only few instruments such as the stethoscope. Even the fever thermometer was not in general use at that time. Treatments were mostly empirical, and surgery was limited to the treatment of wounds, of fractures and dislocations, and to a relatively small number of classical operations.

From the middle of the nineteenth century on, and still more during the last fifty years, medicine has become very scientific, very technical, highly specialized, and very effective. And at the same time the cost of production of the service increased considerably, much more rapidly

than the purchasing power of the population. The general practitioner today needs the help and advice of a large number of specialists and of auxiliary personnel, technicians trained in chemistry, physiology, bacteriology, serology, physical therapists, and others. He needs the full resources of the medical center, the hospital, and laboratory. Hence the present technology urgently requires teamwork, the cooperative efforts of groups of medical workers. Medicine is becoming group medicine that will be practiced in medical centers, and in modern society a family is entitled to have not only a family doctor but its family medical center.

The same basic force that was responsible for the changed technology of medicine, namely, the rise of modern science, also effected basic changes in the structure of society. The development of science led to the great development in technology as a result of which the world became industrialized. And today after two great industrial revolutions the overwhelming majority of all the gainfully employed individuals in an industrial society are wage earners. In other words, a new medical science with broadened tasks is called upon to serve a new type of society, and this obviously calls for adjustments for a system that will permit the physician to make full use of the new technology and to practice preventive medicine on a large scale. For over five thousand years individuals fell sick before they saw a physician. The time has come for the physician to see the people before they are sick and to advise them on how to maintain their health. Another factor that determines the place of the physician in modern society is to be found in the increasing tendency on the part of society to liberate the physician from economic bonds from the necessity to sell his services on the open market, a necessity that prevents him from settling where he is needed most in poor districts and forces him to practice where the per capita income of the population is large enough to provide him with an adequate income.

The desire to finance medical service in a more systematic way and to guarantee health services to all the people led to the development of *Zemstvo* medicine in Russia in 1864 and health insurance in Germany in 1883. Both systems endeavored to spread the unpredictable financial risk of illness among large groups of people and to pool their resources. *Zemstvo* medicine was a system of public medical services for the rural population of Russia, financed through taxation and administered locally by the district and provincial assemblies. It was the logical solution for a country where the majority of the population of low income was agricultural, while health insurance was at that time considered the

more appropriate method of financing services in a country where industrial workers constituted the great majority of the people with low incomes. Under both systems attempts were made to create a place for the physician that made him independent of the ill health of the people and guaranteed him the standard of living to which he was entitled.

And so we are beginning to see the place that the physician is holding in modern society. We see him as a scientist, educator, and social worker, ready to cooperate in teamwork, in close touch with the people he disinterestedly serves, a friend and leader who directs all his efforts toward the promotion of health and prevention of disease and becomes a therapist when his previous efforts have broken down—the social physician protecting the people and guiding them to a healthier and happier life.



EUROPE

CURRENT UNREST IN THE MEDICAL WORLD



MOST of the meetings in our medical week present us with the results of new scientific research. Permit me to talk with you about a very different subject.

For centuries, the importance and the necessity of pursuing scientific research in medicine has been recognized, and in all civilized countries, in numerous hospitals and laboratories, a legion of learned men have devoted their lives to these investigations. One ought not forget, however, that medicine is not a pure science. Its goal is not to enlarge the sphere of its understanding of nature. Medicine is an applied science, with an eminently practical goal. Our medical knowledge, the result of your labors, has to be applied in practice in order to bear fruit. And here

On the return from his first trip to the Soviet Union, Dr. Sigerist stopped at the International Medical Week being held at Montreux, Switzerland, September 9-14, 1935. There, addressing physicians from all countries in French, he reviewed the symptoms of unrest in medicine which he had observed in all western European countries and in America. He attributes the varied difficulties to a single basic cause—that the organization of medicine is not adapted to the needs of an industrial society and the complex techniques of medical science. By contrast, he reports that Soviet medical organization is adapted to modern conditions and is free of these difficulties. The paper was published under the title "L'inquiétude actuelle dans le monde médical" in the *Schweizerische medizinische Wochenschrift* 65:1007-1010, 1935. It was translated from the French by Milton I. Roemer. It was reprinted in *I Internationale Medizinische Woche in der Schweiz* (September 9-14, 1935, Montreux) Basel: Benno Schwabe und Co., pp. 157-168, 1936, also in part in *Le Siècle Médical* February 1, 1936, and translated into Russian by I. D. Straschun and published in *Sovetskii i Rachebnyi Zhurnal*, no. 15, pp. 93-110, 1936.

is where the difficulties begin. Scientists in their laboratories are among themselves, living in the world of pure science. But as soon as the doctor attends a patient he comes into contact with a member of society, and the success or failure of his treatment depends not only on his medical knowledge but also on a number of other factors outside of medicine: social problems, economic questions, religious prejudices, and so on. The doctor gives advice and instructions to patients, but it is obvious that all is practically lost if society is not ready to accept this advice and follow it. We all know how to treat syphilis, but we also know how difficult it is to combat it.

Medicine, while it uses methods borrowed from the natural sciences, is in my opinion above all a social science, for the doctor's goal is not only to heal a sick stomach or a fractured leg but, most of all, to keep people adjusted to their social environment or to readjust them, as the case may be.

In the practice of medicine, two elements are always at play, medicine on the one hand and society on the other, and considerations of a sociological nature are not only appropriate but absolutely necessary if one wishes to understand the phenomena in question. It is, then, a problem in this field that I want to discuss with you today.

The physician who, like me, spends a great part of his life in travel, going from one country to another to study medical conditions—in the past and today—is vividly struck with the profound unrest that at the present moment reigns in the medical world of many countries. It should certainly be worth the effort to try to analyze the symptoms and causes of this unrest.

In England, many thousands of physicians have left the British Medical Association, finding that it does not adequately represent the interests of either the medical profession or the patients, and they have organized into a syndicate. It has been found that medical studies were backward, and I have just read a report on the reform of medical education, presented by a committee named by the universities of Oxford, Cambridge, and London, and by the London College of Physicians, the English College of Surgeons, and the London Society of Pharmacists. In the London medical societies and in Parliament the problem of sterilization is being actively discussed.

In France, there is a strike of medical students in protest against the admission of foreign doctors. They complain constantly of a surplus of physicians. Yet I recall attending some years ago a rally to encourage

young doctors to settle in the colonies. The figures revealed to us were frightful. If my memory doesn't fail me, there was in certain colonies a ratio of one doctor for 30,000 persons, or even more. Thus, there is a shortage of doctors and not a surplus.

Social insurance, introduced some years ago, against the wishes of the majority of doctors, now functions more or less well, but one has only to read the medical press to see that the medical profession is still worried and that statism is a phantom still present.

On the other hand, one reads that certain abuses, like fee-splitting, still exist, and the economic depression will certainly not make them disappear very soon.

In Germany, there is a revolution of the mind which influences medicine profoundly. What characterizes German medicine is that it has always developed by spurts, leaping from one extreme to the other. At the beginning of the last century, medicine was philosophical and romantic, followed by a period of extreme materialism. At the present hour, there is a vague new romanticism. They dream of a national medicine, Germanic, founded on the soil and the blood.

For sentimental reasons, they recommend to mothers not to have their babies in a hospital but in the home, at the warmth of the fireside. The history of medicine proves abundantly that medical science has little chance to develop in a civilization founded on mysticism.

In the United States, medicine has made enormous progress. The medical resources are the most perfected in the whole world: the most modern hospitals, model laboratories, excellent physicians, nurses without equal. But, at the present moment, many physicians live poorly; thousands of nurses are without jobs. Hospitals are being closed, not because the public has no need for them but because of lack of funds to operate them. The pediatric hospital of the Western Reserve University at Cleveland, the finest children's institution I have ever seen, is closed. At the New York Hospital of the Cornell Medical School, a new hospital located in the most sumptuous and beautiful building in New York City, many services could not even be started, because once the building was constructed the money was lacking. The hospital of my university, Johns Hopkins, one of the best known hospitals in the United States, recently had to go and seek \$200,000; otherwise we would have to abandon free services, and this at the depth of the depression, at a time when the population did not have the money to pay hospital costs.

It is just being recognized in the United States, in the face of a prolonged depression, that a modern industrial nation cannot exist without social insurance. A recently enacted law has just established unemployment insurance and old-age insurance. As for sickness insurance, it has not yet been achieved. It is being discussed, and the discussion is more and more bitter. The medical organizations—with the exception of the doctors of California—are absolutely opposed to the whole insurance idea. The arguments offered are the old arguments that one has heard in Europe for the last twenty-five years, in one country after another, and there isn't any doubt that, just as in Europe, sickness insurance will be established in the United States, against the will of the medical profession. And it is very likely that in America the same mistakes will be made as have been committed in Europe, and that the law will have the same defects.

Permit me now to discuss some general symptoms of the current unrest a bit more in detail.

It is not only in England but nearly everywhere that medical studies have been reorganized or are in the process of being reorganized. It is felt that conditions have changed and that the training of the doctor ought to conform to these new conditions. What is being done? Nothing too radical. The duration of studies is being lengthened. One specialty after another is being added. Nothing is being cut out, or very little. And still, it would not be bad to cut out a little, for, in Europe, university education still visibly carries traces of its medieval origins. All the reorganization projects show the same uncertainty, the same hesitations. And what are the causes of this? The reply is not hard to find.

Each field of education, whatever may be its subject, presupposes a certain ideal. Public instruction has an ideal citizen in view and tends to bring up young people toward that ideal. Likewise, medical education is directed toward a medical ideal, an ideal which while having certain unchanging traits still changes in different periods. It is obvious that this ideal was different in ancient Greece, where the doctors were artisans, than it was in republican Rome, where doctors were slaves. At the height of the Middle Ages physicians were clerics, and after the thirteenth century they became "docteurs," that is to say, learned men, and the medical ideal has evolved with the scientific ideal. Let it be said parenthetically that the great physicians of any period, the Hippocrates, Sydenhams, Boerhaaves, Laënnecs, have always been the physicians who have most closely approached the medical ideal of their period.

Only yesterday, the medical ideal was without doubt represented by the family doctor. But what is the medical ideal today? One hesitates—and it is just this hesitation which is reflected in all the plans for reorganization of medical studies.

One other point: the surplus of doctors. It is not only in France that one hears this complaint but almost everywhere. In nearly every country, efforts are being made to discourage young people from taking up a medical career. But does this shortage exist? Are there really too many doctors in the world?

If one consults the statistics one will find that in every country, except the United States and Austria, there is less than one physician per 1000 inhabitants, which is certainly not excessive. There isn't any doubt that, not only in the colonies but in the rural areas of Europe as in America, the number of physicians is far from enough to satisfy the needs of the population.

But what seems even more important to me is that at the present hour medicine has not yet come to grips with certain problems which are nevertheless essential, or at least it has not handled them adequately. I am thinking especially of individual hygiene. In my opinion, medicine, after an evolution of 5000 years, is still in its first period, which one could call the period of therapeutic medicine.

Everyone knows that it is more reasonable and less expensive to prevent a disease than to cure it, and still, with a few exceptions, it is when an individual falls sick that he makes contact with a doctor. I do not wish to deny that hygiene has made great progress. It has changed the environment in which man is called on to live and has eliminated in this way many causes of illness. But today hygiene has much wider possibilities of action. In approaching the individual, in supervising him, in determining by periodic examinations his constitution, his hereditary defects, the dangers which menace him, the doctor can certainly prevent a great many diseases and can give effective care before it is too late.

This individual hygiene is more or less applied in the public schools, but the individual is abandoned as soon as he leaves school. But childhood is not the only period in the life of man which may be menaced.

If one envisages the functions of medicine from this wider point of view, one must agree that doctors do not lack work to do, that there are on the contrary not great enough numbers of them to do the work which awaits them.

Why, then, does one speak of a surplus of doctors? Very simply be-

cause the current economic system does not permit medicine to fulfill all its functions and because the doctor under this system has difficulties in earning a living. There is no surplus of doctors from the viewpoint of society, but only from the viewpoint of the material interests of the doctor.

We come to the economic questions which are largely responsible for the current medical unrest. Medicine—have we not a fear of words—is a service which is sold by the doctor and bought by the patient. Now, the immense progress that medicine has made in the last century has resulted in a significant increase in its cost of production. The length of medical studies has increased more and more. A young physician is thirty years old before he can earn a living. Formerly, to practice his profession, the doctor needed only a room, a stethoscope, and some simple instruments. Today he needs an arsenal if he wants to practice with a clear conscience. The patient has the right to demand a diagnosis as precise as possible. Specialists are consulted. The hospital has completely changed its character. From its origins as a shelter for the poor and homeless sick, the hospital has become a medical center where the patient is examined, cared for, treated, where the pregnant woman is delivered, a center for all medical functions whose importance grows year by year.

But medical care has become more and more costly, too expensive for a great part of the population. A paradoxical situation has developed: medicine paralyzed by its own progress.

The economic principle has not at all times been followed vigorously in medicine. Physicians have always given their services free to indigent patients, which is very fine but basically an absurdity. In nearly every country, the state has established free medical care, through public assistance or other organizations of this kind, but in my opinion it is degrading for a man to be obliged to accept alms, to be counted officially on a register of paupers.

Finally, when the number of indigent persons unable to pay for necessary medical care becomes so large that the public health is menaced, social insurance is introduced. The worker is compelled to make some economies, while his wages are slightly increased in order that it will be possible for him to pay personally the costs of the services which are given to him.

Social insurance certainly marks great progress in our medical organization. One need not, however, exaggerate its importance. It is not

the absolute remedy against social evils. Unemployment insurance does not stop unemployment, the result of our economic system. Likewise, sickness insurance does not stop sickness. The French system is the only one that offers a periodic examination. Social insurance is only a symptomatic remedy, soothing certain wounds inflicted by our system—which is, indeed, very good.

In all countries, social insurance only covers families who have a very modest income. In general, farmers and the middle class, classes that are very numerous and becoming more and more impoverished, do not participate in it.

In the United States, considered the richest country in the world, in 1928, a year of great prosperity, 90 per cent of families had an income of less than \$5000 per year, 21.3 per cent had less than \$1200, and 14 per cent less than \$1000. Since then wages have been considerably reduced, the standard of living continually declines, and for millions of individuals a serious illness is a catastrophe. Conditions are hardly any better in Europe where members of society who are not covered under social insurance often go without medical care which they need.

The economic problem of medicine has not then been solved by the introduction of social insurance—at least that which is found today—and if the public health is to be maintained we will be forced sooner or later to seek other solutions.

Already, the specter of statism makes the medical profession tremble. I must confess it is very difficult for me to understand this fear. We haven't any hesitation in entrusting the intellectual training of our children to salaried personnel. Our medical education is given us by salaried personnel. There are salaried officials who protect our honor and our rights. Why should the idea of entrusting the protection of our health to salaried personnel be so terrifying?

It is repeated to us that without economic competition, without the possibility of making a fortune, a medical career has not any attraction. This is an insult to the medical profession. I am acquainted with hundreds of doctors. I have seen them at work in Europe, in America, in Africa, and in Asia. I have found everywhere a deep idealism and an admirable devotion. It is hard for me to admit that all these physicians would lose their idealism if one deprived them of the enticement of profit, if one gave them in exchange the social security for which basically everyone aspires.

The French Revolution gave us free public education. It has become

recognized that education ought not to be a class privilege, but that it ought to be accessible to all, and that it is not only the individual who benefits from this but the whole society. The day that we are convinced that health is not a privilege but a benefit to which every citizen has a right, the day that we are convinced that public health is as important as public education, we will certainly be obliged to see the consequences.

An argument against state medicine repeated very often is that under such a system the patient would not have the possibility of freely choosing his physician. I am far from denying the importance of free choice of doctor. I know the words of Seneca: "*Aegris nihil magis prodest quam ab eo curari a quo volunt.*" Nevertheless, one must not exaggerate the importance of this argument. This free choice of physician, we have it, you and I, but the indigent patient who goes to a dispensary or hospital does not choose his doctor. The farmer in the village where there is only one doctor, if indeed there is one, has no choice. And in the cities where the patient can choose, how does he make a choice? He goes to consult the doctor in his neighborhood, or there is gossip that directs his choice. He doesn't have the means of judging a physician.

Obviously, the free choice of doctor is very convenient for us. If the patient is not satisfied with his doctor, it is his fault and not ours. It is he who has chosen and who, it would seem, has made a bad choice.

Besides, in our day, that which has above all made medicine advance has been the fact that diagnostic and therapeutic methods have become more and more precise and objective. They have been standardized in such a way that they can be applied not only by a chosen few but by the majority of doctors. Free choice becomes, then, less and less important. And even here, where medicine is already socialized, the patient can choose his doctor more or less freely.

After having analyzed, though very briefly, certain symptoms of illness which prevail in the medical world, we can ask what is their true cause.

If we study the history of society and the history of medicine in the western world for the last century, we find that society and medicine have undergone fundamental changes.

We live today in an industrial society, extremely specialized. We depend on one another more and more. While in the society of yesterday the family was the unit, the center of production and hence the center of the individual's life, industrialization, the concentration of produc-

tion, and new means of transportation have created new conditions. The factory, the farm, the workshop, the office have become the new centers of our life. It would be absurd to wish to go backward. Returning to the middle ages and lowering the standard of living would not resolve the problems of our epoch. It is not the machine which destroys, but man who does not know how to make use of it.

On the other hand, medicine in developing has also changed its character. The same natural sciences have changed both medicine and the economy.

Medicine in our day is extremely specialized as well. Technical equipment has been perfected in unheard-of ways. Think of the progress brought about in diagnosis from Laënnec to today. Without discussing surgery, one cannot even compare it with the conditions in times past. The facts are too well known to have to dwell on them.

In industry, specialization has necessitated the formation of groups, and it was quickly recognized that groups work more rationally and that the costs of production are greatly reduced. In medicine we can observe, especially in America, the beginnings of a similar process.

In medicine, as in economic life, it would be absurd to wish to return to the past. If today we can save countless lives which yesterday would have been hopelessly condemned, we owe this above all to specialization and the technology perfected.

We have, then, on the one hand a new society, on the other a new medical science—phenomena which obviously demand new forms of medical service.

But what are we doing? We are forcing ourselves to preserve at any price the traditional forms, forms which are adapted to conditions that no longer exist. And, in my opinion, this is the primary cause of the current unrest in the medical world.

I have just returned from a study tour of three months in a country where I did not find unrest in the medical world, but on the contrary an enthusiasm and optimism without limit: the Soviet Union.

A trip to the U.S.S.R. is a very dangerous experience that I do not recommend to those who are afraid of thinking or who cherish certain traditional views. One returns overwhelmed, and one has great difficulty in understanding the world in which one lives. I have often tried to explain to Russian friends why, in the United States, twenty-two million citizens live on alms or why hospitals are closed at a time when they are greatly needed. I assure you that it is very difficult to make this under-

standable. Needless to say I made this trip without any preconceptions. I went to the U.S.S.R. as a physician, historian, and sociologist who wanted to learn. I studied social and medical conditions not only in the large cities but also in the country, in the valleys of Caucasia and Armenia. I was able to see everything that I wanted to see. I never found a door closed.

I regret that time does not permit me to draw for you a picture of Soviet medicine. All that I can do is to tell you some observations that I made and some reflections that came to me during my stay in the U.S.S.R.

What has happened in Russia is that a philosophy elaborated long ago has been brought to life. A new political, economic, and social order has resulted from it, which naturally has modified the forms of medical service profoundly.

The general idea is that all men are brothers and that each individual, whatever may be his capacities at the time he works, has the right to have his share of earthly goods. One of these benefits is health. There will always be suffering in the world, for man is a frail creature, but it is indecent for a civilized society to tolerate one of its members' suffering from certain elementary causes like hunger, cold, or avoidable sickness.

Since health is a benefit that must be available to all, medical service is free. The physicians are salaried, but their salaries vary with their functions. The funds necessary for financing the health service come either from the government directly or from social insurance, the funds of which are administered by labor unions. Contributions to the social insurance are not paid by the workers directly but by the industrial enterprise. They represent a part of the surplus from the labor of the worker which in other countries serves to pay dividends to stockholders.

Preventive medicine has top priority, and medical supervision begins from the pregnant woman who is examined at least once a month, who two months before and two months after delivery is excused from all work without any loss of wages. The newborn child is examined regularly. During working hours, the mother can entrust her child to one of a number of nurseries or, after three years of age, to a kindergarten. Medical supervision of youth continues in the schools and does not stop at puberty. On the contrary, young people who enter higher schools are examined not only by the regular physician but also by a psychiatrist, a measure of mental hygiene.

Medical care is given to the population by local physicians or more and more by medical centers, dispensaries, polyclinics, ambulatory care centers, preventive centers that one finds in every locality and which have a place in all large industrial establishments. A dispensary whose organization I studied serves the transport workers of four large Moscow railroad stations. It is organized in 23 sections. All the specialties are represented. The staff consists of 811 persons, of whom 290 are physicians who give 4000 consultations per day.

At the Stalin automobile factory in Moscow, which employs 30,000 workers, I found 15 first-aid stations, 6 dispensaries, and a large central dispensary which directs the services. I found there 112 physicians and 18 dentists. Medical service for prevention, diagnosis, and treatment was complete, with the exception of hospital service which is given in three hospitals of the city where the factory has rooms reserved for it. In 1937 this factory will employ 75,000 workers and new dispensaries are already under construction.

The Clinical Institute of the Moscow District, an institution which in 1934 gave care to 11,314 patients, supervises 3860 medical stations located in the country. The difficult cases are sent to the institute, and the institute doctors regularly visit the rural stations. A medical school is attached to the institute, and refresher courses are provided regularly for the doctors. Again a difficult problem to solve with us, but easy in the U.S.S.R. In all nations, the medical faculties organize refresher courses, but it is not easy for the rural doctor to attend them. Either he has to sacrifice his vacation or else he must abandon his patients for a certain time, which is always a rather heavy sacrifice. In the U.S.S.R., the doctors are summoned every three years for courses of this type, which often last several months. Their salaries are paid, as well as their travel expenses, and they are even given the most important new medical publications free.

I have given you some details as examples in order not to dwell on generalities. I found numerous dispensaries and hospitals of the same type in all the towns that I visited and even in the most modest ones in the country.

Another aspect of Soviet medicine that impressed me strongly is the organization of rest and recreation. It is not enough to reduce the hours of work, to have five days of rest per month instead of four, to give every worker paid vacations of two to four weeks and sometimes more; the worker must be given the possibility of spending his leisure time in such

a way that his health and his cultural development profit from it. Soviet cities are proud of their parks of culture and rest, which with their theatres, concert halls, meeting rooms, libraries, with their places for all sports, their children's villages, are really what their names indicate.

Physical culture has become popular. I will never forget a free day in Moscow, when 120,000 gymnasts, men and women, workers of Moscow, marched on Red Square before their leaders, radiant, in robust health—individuals who under the old regime would have dwelled in unclean hovels in an atmosphere of filth, tuberculosis, and alcohol. And I am certain that Romain Rolland, who a few steps from me was attending the festival, was equally impressed.

Vacations must serve to heal the sores of work. I visited many rest homes and many sanatoria in Russia, the Ukraine, the Caucasus, and Crimea, where workers were cared for and regained their strength.

The philosophy which is at the base of the Soviet state is a materialistic philosophy. It does not spring from a vulgar materialism, but from dialectical materialism, a philosophical materialism. It is thus a rational philosophy which excludes mysticism and is based on natural sciences and political economy. In such a situation, medical science has the best chances, and a whole generation is at work with an ardent fervor. I visited many scientific institutions, and I admired the plans of the Institute of Experimental Medicine that is now being constructed near Moscow. The government gave 200,000,000 rubles just for the buildings, and the institute, which already employs more than 600 persons, will undoubtedly be a world center of medical research.

It would be absurd to expect everything to be perfect in Soviet medicine. A new world is not built in fifteen years. The resources are far from being complete. The number of doctors is not yet sufficient. But the physician who goes to the U.S.S.R. without preconceived ideas cannot help but be impressed by what has been accomplished in so short a time. And what is important is to observe that the system works and that it seems to work very well.

I have returned from my trip with a conviction that Soviet medicine represents a form of health service adapted to the conditions of the industrial society of our day, and that what is happening now in the U.S.S.R. is the beginning of a new period in the history of medicine.

The future will tell us if this system will be applicable in other countries and if its advantages are verified.

YUGOSLAVIA AND THE ELEVENTH INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE

THE International Society of the History of Medicine was organized in Paris in 1921 following a resolution of the International Congress of the Healing Art held in Antwerp in 1920. The society has national sections in most countries, and our American Association of the History of Medicine is acting as American and Canadian Section of the International Society. Each national section elects a delegate who upon approval of the international society becomes a member of the permanent committee whose seat is in Paris. The permanent committee and the officers direct the affairs of the society. The official organ of the society is the monthly journal *Aesculape*, and since 1936 the society is publishing at

.....
Almost every summer while he lived in America Dr Sigerist traveled back to Europe, and in 1938 it was to the International Congress of the History of Medicine in Yugoslavia. The second World War was brewing, and political clouds hovered over the meeting. It provided the occasion, however, for Sigerist to travel through Yugoslavia, and in the following paper he combines a travelogue with an account of the history and current sociology of the country, its medicine, its health problems, and its health service organization. The paper was published in the *Bulletin of the History of Medicine* 7:97-147, January, 1939. A few paragraphs regarding details of personalities and papers presented at the meeting have been deleted.

irregular intervals *Archives de la Société Internationale d'Histoire de la Médecine*. The society in addition publishes the transactions of its congresses. . . . These congresses are as a rule held every three years.¹

The last such meeting took place in Madrid in September, 1935. These glorious autumn days will remain unforgettable to all who were privileged in attending this gathering. The tragedy that was soon to befall the Spanish people was in the air already and could be perceived by whoever knows how to feel the pulse of a country. We were brilliantly received by high officials, archbishops, and generals. We were entertained lavishly, but when we drove from Madrid to Toledo, where the meeting was to be opened formally, we saw poor peasants tilling the soil with hand plows and mills operated by blindfolded donkeys, while in Toledo, in the cathedral, we found buckets full of pearls and precious stones. Life was gay enough in daytime, but at night the streets assumed the aspect of a besieged city with large detachments of police, infantry, and cavalry patrolling the streets. And in the hotel my elevator boy and waiter studied the works of Karl Marx. One year after we had been offered a magnificent banquet in the Alcazar of Toledo, the latter was blown up and the President of the Madrid Congress Gregorio Marañón is now living abroad while we are sending American physicians to help the Spanish people in their struggle for independence.

The congress of 1938 was to be held in Athens, Constantinople, Sophia, and Zagreb, but Greece and Bulgaria felt unable to receive the society. Turkey wanted to have the congress held not in Constantinople but in Ankara, and when Yugoslavia extended an invitation to the international society to hold the entire congress in its country this was gratefully accepted. The congress was to last not one week, as it usually does, but two weeks, and was to travel through the chief centers of the country.

The charm of such international gatherings is not only that you meet your old friends and colleagues and have an opportunity to discuss your problems with them, but also that you visit new countries under most pleasant circumstances and—at reduced rates. The attraction, as a matter of fact, is such that many people who have no connections with medical history whatever all of a sudden take a tremendous interest in the subject. The Madrid congress was already crowded with such "tourists,"

¹ The following international congresses of the history of medicine have been held in the past: Antwerp, 1920; Paris, 1921; London, 1922; Bruxelles, 1923 (as section of the International History Congress); Geneva, 1925; Leiden-Amsterdam, 1927; Oslo, 1928 (as section of the International History Congress); Rome, 1930; Bucharest, 1932; Madrid, 1935.

and this year the international society felt compelled to enforce Article III of its regulations, according to which only members of the society and residents of the country in which the congress takes place are admitted to the meetings. The "tourists" therefore were cordially invited to become members of the society, which did not make them historians but made them support a good cause by paying dues. . . .

Yugoslavia is a beautiful country indeed with its great rivers, its forests, and with its mountains—high peaks in the northwest, lovely hills in the central part, and the bare rock of the Karst along the Adriatic. The population has still preserved its old customs, still wears its picturesque costumes. West and east meet in this country and give it a charm and a variety that is rarely found on such a relatively small territory. Yugoslavia no doubt is a paradise for tourists, and traveling is made easy through the travel bureau *Putnik*, an organization founded in 1923 which is partly owned by the state and partly by various tourist agencies. *Putnik* was in charge of transportation and the material side of the congress and solved its task as well as ever possible. It was not easy to satisfy a hundred and twenty highly individualistic persons in a country in which hotels and other tourist facilities are still young.

As soon as I had heard that this year's congress would be held in Yugoslavia I had decided to attend it, not only because I was interested in these meetings but because I was most eager to visit the country and to have a glimpse of the public health work achieved there by Dr. A. Štampar, who undoubtedly is one of the most powerful contemporary figures in the public health field.

I traveled to Yugoslavia from Switzerland through Italy on the Simplon-Orient Express and as soon as I emerged from the tunnel I noticed a huge inscription announcing Italy's creed: *Credere—Obbedire—Combattere* ("to believe, to obey, to fight"). This reminded me of another huge poster that the Germans had put up in Breisach on the Rhine facing France with their slogan: *Ein Volk—Ein Reich—Ein Führer*, whereupon the French had reciprocated with a poster of the same size announcing their creed: *Liberté—Égalité—Fraternité*. These slogans illustrate better than anything else the present situation of Europe and the tension which must result when nations are forcing their creeds upon neighboring countries.

ZAGREB

The congress convened at Zagreb, the capital of Croatia, the most pro-

gressive city of the country, beautifully located on hills. You met many old friends there: Victor Gomoiu, Rumania's great surgeon and historian who has written a large number of monographs discussing all aspects of the history of Rumanian medicine, and his very charming wife Viorica Gomoiu, herself a very able surgeon and historian. Aldo Mieli, Secretary of the International Academy of the History of Science, had come from Paris with galley proofs of a big history of Arabian science under his arm, on which he was working whenever the congress gave him a minute's time. Davide Giordano, former President of the International Society, former Mayor of Venice, Senator of Italy, surgeon, and historian, was there, one of the most pronounced personalities of the society.

The size of the foreign delegations was determined by the influence foreign powers wanted to exert upon Yugoslavia. Germany therefore was at the top, having sent a large, well-disciplined delegation, with Paul Diepgen as *Fuhrer*, who represented not only the German Reich and the University of Berlin but the University of Vienna as well. Italy followed with a delegation of a dozen members, and the Balkan countries were naturally strongly represented, Turkey first of all, where Ahmet Süheyl-Ünver is developing a very strong school of medical history. . . .

It would be useless to deny that the political tension affected the meeting. The absence of some of the most prominent members of the society became conspicuous at once. Professor Arturo Castiglioni, who had never missed a congress and who was official representative of Italy in the permanent committee of the society, had been refused a passport by his government. The same had happened to Professor Max Neuburger, whose seventieth birthday was to be celebrated formally at the congress, and several other distinguished colleagues were missing who for racial reasons were not allowed to leave their countries. Until 1927 the Germans and their allies had been kept out of the international society. We had struggled for years to have them admitted, and for the first time in Holland in 1927 the society had become truly international and open to all scholars in the field. The Germans now are dominating the society, and racial prejudice is creating new antagonisms.

It was a most heterogeneous group that met in Zagreb on September 1, while war clouds were beginning to darken the horizon, and a great deal of tact was required by everybody so as to preserve the harmony necessary for such a gathering. . . .

After a luncheon tendered by the mayor of Zagreb the members of the congress visited various departments of the Croatian Medical School

and the Institute of Hygiene. Higher education in Croatia can be traced back to the seventeenth century.² In 1607 the Jesuits organized a college in Zagreb. In 1662 they established a philosophical faculty and thus became the founders of the Academy of Science, which was chartered in 1669. From the end of the eighteenth century on, the academy repeatedly requested the government to found a medical school, which seemed highly desirable for improving the conditions of public health. In 1811 a Zagreb physician Rudolph Lamprecht founded a private school of surgery in one of the hospitals (Zakladna Bolnica) but it was only short lived. In 1840, 1843, and 1845 the Croatian Diet and in 1850 the Medical Society of Zagreb petitioned the government to establish a medical school, but always in vain. In 1861, after the downfall of absolutism in the Austro-Hungarian Empire, the Diet wished the academy to become a university to which a medical faculty was to be added, but the Crown declared that a university in Croatia would not have enough students nor the funds to support it—whereupon funds were raised in the country. But it was only in 1874 that the university was founded at last, however, without medical faculty. Again funds were raised, and during the war in 1917 without waiting for the royal approbation the university began to admit medical students even before professors had been appointed. Courses were given by professors of the faculty of science. The government was finally compelled to give in, and the first appointments to medical chairs were made in April, 1918. During the academic year 1936-1937, 796 students were registered in the medical faculty, and at the end of that year the school had trained over a thousand physicians.

The University of Belgrade was founded in 1905. A medical faculty was planned but could not be organized before 1919. In Ljubljana, the capital of Slovenia, a university with medical faculty was established by Napoleon in 1800 but broke down after a few years in 1814 when he had lost Illyria. The new university of 1919 has a medical faculty which, however, is not complete and trains students only in the basic sciences.³

The day of September 3 began with a visit to various cultural institutions of the city such as the university library, the Academy of Science, and the cathedral. The high spots of the morning were a visit to the Ethnographical Museum, a unique collection of Yugoslavian folklore

² Vladimir Cepulić, *Medicinski Fakultet u Zagrebu i Nastojanja Oka Njegegoz Obitelj s Obiteljima Obzrom na Ulogu Zbora Liječnika*, Zagreb, 1938.

³ Djordje Kovačević, *Historische Darstellung der Sanitätsverhältnisse der jugoslawischen Provinzen in ihrer Beziehung zur Gründung der medizinischen Fakultäten*, Inaug. Diss., München, 1935.

that gives a most impressive picture of the rich artistic life of the peasantry, and a visit to the Natural History Museum, where Professor Zarnik reported on the excavations of Krapina.

After a luncheon offered by Professor Thaller in the Hospital of the Sisters of Mercy, his chief field of activity, the scientific sessions were resumed, and the subject on the program was science in popular medicine (plants, animals, and minerals). . . . Throughout the afternoon a large number of papers were read on this particular subject, and the day ended with a concert in the open air in front of the cathedral and a brilliant reception at the governor's palace. The day was spoiled, however, by news that had just come from Italy. The anti-Jewish decrees had been published, which would throw over 170 university people out of office. Needless to say that there was general consternation among all democratic members of the congress.

September 4 was a Sunday. . . .

Professor Victor Gomoiu gave a comprehensive report on the status of medical history in the various countries based upon a questionnaire that he had sent out to the national delegates a year ago. I am afraid that his report gave a far too optimistic picture, because he did not differentiate between full professorships and honorary chairs, and we know all too well that many universities throughout the world claim that they are teaching history of medicine while it actually is done very often in the most inadequate way. No formal resolution about the necessity of teaching medical history was passed as had been done repeatedly in previous years. It is not resolutions that will introduce the subject into the medical curriculum but the example we set in our work. If we can demonstrate convincingly the value of medicohistorical studies, I have no doubt that they will become a recognized subject. If we fail, however, no resolution in the world will have the slightest effect. . . .

THE SOCIAL AND ECONOMIC STRUCTURE OF YUGOSLAVIA

The public health situation of Yugoslavia is determined, like everywhere, by the social and economic structure of the country, and the most characteristic feature is that this is an agrarian country and that its population is immensely poor. Eighty per cent of the 15 million population consists of peasants who live in villages. They were serfs until 1848. They were liberated then but had no land and were obliged to work on the large estates of a landed gentry, aristocratic families many of which were

foreign, Hungarian or Austrian. After the World War, the Kingdom of the Serbs, Croats, and Slovenes was founded. The peasants wanted land, and when a revolt was threatening a land reform act was passed. Many large estates were broken up; two and a half million hectares⁴ were expropriated, and the owners were compensated in bonds. This land was distributed among 637,328 peasant families.⁵ It was something but not enough. It was less than four hectares of not always fertile soil per family, and it has been estimated that one hectare of cultivated land is the minimum required for the subsistence of one individual. The farming methods are very often primitive, and production per hectare is less than in most western countries. The distribution of land and the fertility of the soil are quite uneven. Ninety-five per cent of all peasant families possess less than half and 5 per cent somewhat over half of the cultivated soil.⁶ Seventy-six thousand, four hundred and nineteen peasant families have no house of their own; 173,337 have no land; 534,012 no stock.⁷ In the Vojvodina, the province bordering Hungary, the soil is fertile and the peasants are either *kulaks* or extremely poor farm laborers. In Bosnia the peasants grow excellent tobacco, but tobacco is a state monopoly. Production is controlled, and crops are purchased by the state at a low price set by the state, which makes tremendous profits on tobacco. The best conditions are found in Slovenia, where the population has the highest educational level of the country, where the church is powerful and works with the people, and where the officials are Slovenians. It is the rare case of a minority that is better off because it has its own language. The Croats and Serbs speak the same tongue and as a result the central government is able to send Serbian officials to Croatia who oppress the people and are utterly unpopular. In Dalmatia, the soil is almost bare rock and the population is extremely poor. A peasant will not hesitate to walk six hours in order to sell half a dozen eggs.

The economic depression has hit the people very severely. Income from agriculture dropped from 1926 to 1936 from 36 to 21 billion dinars.⁸ The average peasant lives on corn bread and beans and sells his

⁴ One hectare is equal to 2.471 acres.

⁵ These and the following figures, unless other sources are mentioned, are taken from *La Yougoslavie par les Chiffres*, Beograd, 1937, Bureau Central de Presse.

⁶ Andrija Stampar, "Observations of a Rural Health Worker," *The New England Journal of Medicine* 218 (24): 991-997, June 16, 1938.

⁷ A. Stampar, *Public Health in Jugoslavia*, School of Slavonic and East European Studies in the University of London, 1938, p. 11.

⁸ One dinar is about 2 American cents.

other products, milk, eggs, poultry, meat, to the cities in order to be able to pay taxes and to buy the barest necessities. Much of these agricultural goods is exported, notably to Germany, which pays for them in machines and other commodities which do not benefit the peasant.

The situation of the industrial worker is hardly any better. The chief industries are food industry, textile, lumber, mining, and iron industries. The country is extremely wealthy in natural resources, many of which have not been exploited yet. Over 50 per cent of the capital invested in industry is foreign so that the surplus values created by the Yugoslavian worker do not benefit the nation. Germany is beginning to dominate the country economically. In 1936, 37 per cent of the total imports were from and 38.4 per cent of the exports went to Germany and Austria, and the percentage has increased considerably since. The fate of Yugoslavia, like that of other Balkan countries, is to become an economic vassal of the Third Reich.

The industrial population is not large. In 1936 the social insurance offices registered 741,713 industrial workers. In that year the average wage amounted to 20 dinars a day, which is about 40 cents, very little in a country where life is definitely expensive. Over 100,000 workers earned less than 10 dinars a day, or about 20 cents. And there is a tremendous turnover of labor, the average worker changing his job five times a year. No wonder that in 1936 there were not less than 400 labor conflicts and 275 strikes.

Education has progressed but is still at a rather low level. In 1931 the country still had 44.6 per cent illiterates. There are provinces where over 70 per cent of the population can neither read nor write, and in five provinces 80 per cent of all women are illiterate. In the Soviet Union illiteracy in less than 20 years was reduced from 70 to less than 10 per cent. This was possible because the Soviet Union has a government of the people, for the people, because it wants to be a democracy as soon as ever feasible, and therefore needs an educated population, able to take an active part in government.

In Yugoslavia there is a definite antagonism between ruler and ruled. The state was founded as a constitutional monarchy with a parliamentary system. In 1929, however, parliament was dissolved, the constitution was abolished, and the king made himself a new constitution. There is a parliament again today, but elections are by open ballot under police supervision and the results can be interpreted the way it pleases the government. Yugoslavia today is a virtual dictatorship, not of one man (the

present king is a minor still) but of a few men, and the population is constantly watched and spied upon by an enormous police force.

It is obvious that under such conditions the prevalence of disease is still high, and that public health services are facing a very difficult task. The occurrence of some contagious diseases is illustrated by the following figures:⁹

	1934	1935
Typhus	2210	683
Typhoid	7805	5142
Diphtheria	11606	7892
Dysentery	3393	3141
Erysipelas	2134	2561
Anthrax	718	788
Rabies	15	20

Malaria is endemic in the eastern section of the country, and the government policy, according to which soldiers are shifted from one province to another, contributes to the spreading of the disease. Trachoma still occurs as a result of the low standard of living of certain regions. Venereal diseases are endemic in Bosnia and are very widespread in the cities. Brothels have been closed, but the causes of prostitution have not been removed. Poverty of the villages compels the surplus population to migrate to the cities, where the young people are very much exposed to contamination.

Yugoslavia has one of the highest European death rates: 17 for 1000 population in 1934, a figure that was surpassed only by Rumania (20.7). Infant mortality is equally high: 150 per 1000 live births in 1934 (Rumania 182, Lithuania 166). The birth rate is high and amounted to 31.4 per 1000 inhabitants in 1934.⁹

Widespread superstitions create more handicaps to public health work. In the Mohammedan section of the country the ancient ideas of purity, familiar to us from Leviticus, are still alive. A woman in childbirth is unclean and is therefore not allowed to bear child in the house. As she is too poor to go to a hospital and as not enough hospital facilities are available, she goes to the stable and bears her child among sheep and goats, with the result that infections are not infrequent. In Dalmatian villages the idea is often met with that a newborn child is not to be taken out of the house before it has been baptized. The underlying idea

⁹ League of Nations, Health Organization, *Annual Epidemiological Report* . . . for the year 1935, Geneva, 1937.

probably is that inside the house the unbaptized child still is protected by the holy images that every peasant house contains, while outside the house it would be a target for evil spirits unless it had been baptized. Custom, however, requires that the father be present at the ceremony, and as many Dalmatians are sailors it may be months before the baptism can take place. During all that time the infant remains in the unventilated room, and when it is finally brought into the open air it often happens that the child catches pneumonia and dies within a few days.

In spite of all these gigantic handicaps the fight against disease has been taken up in Yugoslavia with great energy, as will be described in following chapters.

BELGRADE

It was late evening when our train approached the capital. We crossed the Sava and the city was in front of us, illuminated by millions of lights. Belgrade is a beautiful city with a unique location on the banks of two mighty rivers, the Danube and Sava. Old quarters have still been preserved. The minaret of a mosque is a last reminder of the period of Turkish domination, and a small inconspicuous two story building was the seat of the Serbian University in Turkish days. The city suffered a great deal during the World War, when it was bombed repeatedly and the Germans removed the last scrap of metal they could find. The general impression today, therefore, is that of a new city with many large modern buildings, many of them in excellent style.

There is much rivalry between the capitals of Croatia and Serbia, a competition by which our congress greatly benefited. We had been received in the most lavish way in Zagreb, and it was obvious that Belgrade would not stay behind but on the contrary try to surpass Zagreb. We therefore were invited to one banquet after another and to endless entertainments, until after four days spent in Belgrade most of us were complete wrecks. There was again a formal opening session, in the great hall of the university under the presidency of Professor Alexander Belič, President of the Serbian Academy of Sciences. Formal addresses were presented by members of the authorities and officers of the international society. Two subjects were on the program of the scientific sessions of the day: Medicine in Popular Poetry and Medicine in Yugoslavia. I was particularly interested in the latter subject because I knew very little about it.

The history of medicine in the territory of present Yugoslavia can be divided into four periods. The Romans dominated the country for four centuries, the eastern section being part of the province Pannonia the western of Illyria. The physicians of that period were Roman army physicians, and two graves of such army doctors have been excavated. Medical instruments have been found and wherever the Romans went they established public health institutions such as water supplies and *thermae*. In the second or medieval period the Serbian kings and princes had court physicians, some of whom were Italian, while others were natives of the country. The first Slavic medical book was written in the fourteenth century and is now preserved in Prague. Seven hospitals are recorded which were either in monasteries or not far from them. Two leprosaria were established in Zagreb during that period. Ragusa is particularly rich in medical records. As early as 1281 the city had appointed two doctors, whose number was increased to four and finally six. A pharmacy was built in 1272 and in 1377 Ragusa was the first city to establish a quarantine. Venetian, Turkish and German or rather Austrian, influence dominated the third period, and a new period was entered upon early in the nineteenth century, when Serbia and Montenegro regained their independence.¹⁰

There was a strong health movement in Croatia as well as Serbia long before the War, somewhat similar to the one observed in Russia at that time. The conditions were very much the same, both countries being primarily agricultural countries. The Yugoslavian lands however, did not succeed in establishing a system comparable to Russian *Zemstvo* medicine but the need for it was felt and it was recognized that the protection of health is a concern of government. The great pioneers in this movement were Dr Vladan Djordjevic and Milan Jovanović Batut the latter still alive in his nineties today and a member of the honorary committee of our congress.

September 6 was entirely devoted to the celebration of the fifteenth birthday of King Peter. The evening before we saw a torchlight parade in the streets of Belgrade. On the morning of September 6 we were the guests of the government at a military parade in Banjica. I was less impressed by the mechanized section of the army or the colorful cavalry.

¹⁰ Risto Jeremić *Brevi Conspectus Historiae Culturae Sanitariae in Jugoslavia* *Medicinski Pregled* 13:160-162, 1938 (the whole number of this journal is devoted to the history of Yugoslavian medicine) *Extraits de Travaux sur l'Histoire de la Culture Sanitaire de la Yougoslavie et de la Péninsule Balkanique* *édités par l'Institut Central d'Hygiène* Belgrad 1934-1938.

han by the infantrymen, small but sturdy fellows who have earned a great reputation for the Serbian army in many wars. After the parade the congress went to the tomb of the Unknown Soldier in Avala, a simple dignified monument in black marble, the work of Meštrović, undoubtedly one of the most powerful sculptors of our time, a man who does not belong to Yugoslavia alone but to the world at large. The monument has a beautiful location on top of a steep hill. After lunch a group of congress members drove to Oplenac to deposit a wreath at the tomb of King Alexander. He is buried with the other members of his family in a mausoleum decorated with mosaics in Byzantine style in a valley where the family had its holdings. The dynasty of the Karadjordjević was always proud of its peasant origin. In the evening we were invited to the officers' ball, one of the great social events of the Belgrade season. It was a very formal and colorful affair with the men in great uniforms and the ladies in court gowns, dancing not only fox trot and tango but also Viennese waltzes and Serbian kolo.

The morning session of September 7 was devoted to a discussion of the History of Malaria, and half a dozen papers were read or presented in print. A lunch was offered on a Danube boat while we sailed down the river to Smederevo, an old town famous for its excellent wine that compares favorably with some of the best Rhine wines. We were welcomed by the mayor, himself a doctor, who conducted us to the ruins of an old fortress, once the stronghold of a Serbian baron who had complete control over the Danube and terrorized the population of the region. The day ended with an excellent performance of Musorgski's opera *The Fair of Sorochina* in the National Theater.

September 8 was our last day in Belgrade. In the morning session papers on various subjects were read. It would be too long to list them, but they covered a very wide range of interests. In the afternoon the official part of the congress came to an end. More speeches were made, Gomoiu and Thaller kissed each other, and everybody was moved. The Minister of Social Welfare and Public Health had invited us to a banquet tendered by the government, and once more we tasted the excellent fogas and the Yugoslavian poultry that has no equal in the world.

PUBLIC HEALTH ADMINISTRATION

The kingdom of Yugoslavia was founded on December 1, 1918, and in 1919 a Ministry of Public Health was established whose work was sup-

plemented by a Ministry of Social Welfare. As both agencies were serving the same purpose, they were amalgamated in 1929 to form a single Ministry of Public Health and Social Welfare. Immediately attached to the ministry as its chief research laboratories and advisory bodies are two great institutions that have jurisdiction over the whole country, namely, the School of Public Health in Zagreb and the Central Institute of Health in Belgrade.¹¹

Since 1929 the country is divided in nine provinces (*banovinas*), to which the capital Belgrade has been added as an administrative unit of its own. At the head of each province is a governor (*ban*) who is nominated by the central government and is assisted by a provincial council whose members are equally nominated. The governor administers his province through departments, one of which is the Department of Social Welfare and Public Health. Each province has an institute of health which represents the highest authority in health matters in the territory. Within the province cities of more than 4000 and villages of more than 6000 inhabitants constitute public health administrative districts, and smaller villages combine to form such districts whose population is not to exceed 15,000 inhabitants. Public health is administered in these districts by health centers which are under the control of the provincial institutes of health and are operated by the local district doctors and parish medical officers. There are 48 health centers and 123 rural health centers today, and, if one adds the various tuberculosis and venereal disease stations, school clinics, and other similar institutions, there are today 300 state medical institutions scattered all over the country to protect the people's health.

Hospital facilities have been greatly developed. The majority of all hospitals are owned and operated by the state (157 state hospitals with 25,327 beds, as compared with 35 private hospitals with 2061 beds, in 1936). The total number of beds available is 27,388 or 1 to every 547 population (in the United States 1 to 137) to which 3171 beds in state and private sanatoriums must be added.

The number of physicians has increased but is still relatively small. In 1936 the country had 5630 doctors or 1 for every 2660 population (in the United States 1 to 760). The doctors are very well trained in five

¹¹ See A. Stampar, *Organization of the Public Health Services in the Kingdom of the Serbs, Croats and Slovenes*, League of Nations, Health Organization, C. II. 326, 1925. 51 pp; A. Stampar, *Public Health in Jugoslavia*, London, 1938. B. Konstantinović, *La Yougoslavie pour la Santé Publique*, Beograd, 1937.

year courses supplemented by a practical year, six months of which are devoted to curative and six months to preventive medicine. This emphasis on the preventive aspect of medicine is excellent. An additional training of at least three years and a special examination is required for all those doctors who want to become specialists or to hold responsible positions in any state institution of health. As the country is poor, the doctors could not make a living in private practice and the majority of the population could not get any medical service if it had to purchase it from private physicians. Over 3600 doctors have salaried positions in the government service, but salaries are small so that most doctors must make an additional income through private practice, a combination that is never good. Štampar is certainly correct when he states that "the day of the private doctor is over," and there can be no doubt that medicine is socialized to a very large extent in Yugoslavia. The better developed and the more progressive a province is, the more medicine is socialized, and Slovenia, which has the smallest percentage of illiteracy, has an almost complete system of state medicine.

SARAJEVO

After the tension of the days spent in Zagreb and Belgrade, we felt very much relieved when we boarded the train for Sarajevo in the morning of September 9. It was a superb ride through the mountains, through wild gorges, and through endless tunnels, and all of a sudden toward evening we entered an enchanted world. All of a sudden we were in the middle of the Orient: slender minarets wherever we looked, cemeteries all over with those queer turban-shaped tombstones, veiled women, a real Oriental bazaar. The population of Bosnia is not Turkish but Croatian and Serbian. Only the upper class consisted of Turks who withdrew to the east when Turkish domination came to an end in 1878. But the population had become Mohammedan, had adopted Turkish customs, and has preserved them to our days while Turkey was modernized.

The official part of the congress had come to an end. There were no more papers to listen to, we could relax and live and act as tourists. September 10 was devoted to sight-seeing. We crossed the bridge over the Miljačka and came to the place where the first shot of the World War was fired, where the death sentence of 10 million people was pronounced. When we stood there Germany had already mobilized half a million

people, France had decreed partial mobilization, and war clouds were darkening the horizon again. We visited mosques and beautiful Turkish houses and felt transplanted into the world of the *Arabian Nights*. We saw a rug factory where highly skilled women laborers work for shockingly low wages. We were received in the most gracious way by the mayor of the city. We drove to the surrounding hills where the view of the city and of the Balkan mountains is overwhelming. Some members of our congress could not resist the temptation to "go native." They bought fezes and looked quite genuine. In the late afternoon some of us drove to a hill which is dotted with gigantic tombstones of the Bogomili, an old Christian sect that came from Asia Minor in the twelfth century and played an important part in the history of Bosnia. The tombs were respected throughout the centuries because it was known that they contained no riches. Late at night some of us went for a long walk all through the city. The full moon was shining, and Turkish beaux were serenading their belles.

September 11 was a Sunday. We went to visit the leprosarium where about a dozen patients are hospitalized. Then we called at the palace of the vice-governor of the province, where again we were received in the most cordial way. The afternoon was free, and toward evening we gathered in Ilidza, a health resort not far from Sarajevo with a powerful sulfur spring. A banquet was tendered to us there by the vice-governor with the local doctors and health officers.

Although the days spent in Sarajevo were mostly devoted to sight-seeing, the congress yet had a very important item on its program, namely, the chief session of the permanent committee. It was held in the city hall on September 10. The national delegates and officers convened to decide on future policies of the society. While all controversial questions had been carefully removed from the first meeting in Zagreb, now they had to be discussed. The chief such question was in what country the next congress should be held. Ever since 1927 Germany had been a candidate, and the society had always desired to honor Karl Sudhoff by having the congress held in his country under his presidency. But then the Nazis came into power, and at Madrid it was felt that the atmosphere of the Third Reich would not be favorable for such a meeting. Since Madrid, however, German power had increased so tremendously that without any formal vote the permanent committee decided to accept an invitation of Germany and to hold the next Congress under the presidency of Professor Paul Diepgen in Berlin where, as Professor Diepgen

said, the achievements of the Third Reich could be demonstrated most convincingly. There was no chance for any dissenting vote. And as soon as Berlin had been accepted the Italian delegate popped up and invited the society to hold its second next congress in Rome in 1942, when a world fair would take place in the Italian capital. Some delegates voiced the view that a world fair was a good reason to avoid a city, but their objections were easily overridden and the Italian invitation was accepted. And as the Rome congress will be held in 1942, the Berlin congress will take place in 1940, that is in two years instead of three. In other words, the next two International Congresses of the History of Medicine will be held in fascist countries so that the Jewish members of the international society will be barred from its activities until 1945. Not officially, of course, because they undoubtedly will be invited to attend the meetings, but no Jewish scholar who has any self-respect can possibly accept the hospitality of a government that considers him a low species of ape and persecutes his race in such a barbaric way.

The situation is most deplorable, and I am convinced that if any democratic country had extended an invitation the permanent committee would have considered it with enthusiasm, but there was no such invitation. The aggressive nations today are the fascist countries, and it is not in the traditions of liberalism to use science and learning for purposes of national propaganda. As things now stand, the next two congresses are going to be tremendous political demonstrations for which the ministries of propaganda of the respective countries will spend enormous amounts of money. Respected members of our society, however, like Max Neuburger, Charles Singer, Arturo Castiglioni, Aldo Mieli, and so many others will not be able to attend them, and I know that many liberal members of the society will stay away also. And so the international society is again dominated by political considerations, in an infinitely worse manner than before 1927.

To counterbalance the evil impression of these decisions the permanent committee elected Max Neuburger, Charles Singer, and Karl Sudhoff as Honorary Members. Henry E. Sigerist was elected a Vice-President. A committee was appointed for the study of medical folklore and another committee to decide on questions of priority. The latter needs an explanation. Should there be controversies, as frequently happens, about the priority of a discovery, the committee with the help of specialists would try to settle the question by approaching it with all methods of critical historical investigation.

It then was decided to have the following questions studied and discussed at the Berlin meeting: (1) methods of teaching medical history; (2) medical history in a definite period in various countries; (3) the history of typhus. When the meeting adjourned many delegates left with the impression that the international society had entered a critical period of its history.

SOCIAL INSURANCE

Austria and Hungary were the first countries to adopt social insurance after Germany, and therefore the formerly Austrian sections of Yugoslavia, Slovenia and Dalmatia, had a system of accident insurance since 1887 and of sickness insurance since 1888. The formerly Hungarian sections, Croatia and part of the Vojvodina, had sickness insurance since 1891 and accident insurance since 1907. Social insurance was introduced into Bosnia and the Hercegovina in 1909, and in 1910 Serbia intended to introduce some insurance scheme but was prevented from doing so by the wars.

Social insurance legislation for the kingdom of Yugoslavia was passed in 1922 and was repeatedly amended and extended in the following years. Today it is one of the most modern and comprehensive insurance schemes.¹² It includes three groups: (1) sickness insurance; (2) accident insurance; (3) insurance in case of disablement, old age, and death. The latter group was added by legislation of 1937.

The social insurance fund is an autonomous organization with central administration in Zagreb and seventeen local offices to which three small special offices are added for the insurance of employees in stores. The organization is under control of the Ministry of Public Health and Social Welfare but is autonomous otherwise and has its own arbitration courts.

Who is insured? All wage earners and salaried employees regardless of sex, age, and nationality, and regardless of the amount of income. For all these groups social insurance is compulsory, and the benefits are extended without additional premium to all family members whether legitimate or illegitimate.

Not yet included are: (1) agricultural workers and servants, but insurance benefits are extended to them when they attend threshing and

¹² *Social Insurance in Yugoslavia*, Report of the Central National Health Insurance Office in Zagreb, 1922-1926, Zagreb, 1929, *Workmen Insurance in the Kingdom of Yugoslavia*, Zagreb, 1937.

other agricultural machines; (2) persons temporarily employed in household service; (3) fishermen at sea. Government employees have benefits equal to those of insured persons, and transport workers and miners have their own insurance funds controlled by their respective ministries. In 1936 an average of over 600,000 workers were insured.

What are the benefits? The benefits consist of services and indemnities. Sickness insurance guarantees complete medical service and maternity care, including free medical treatment, assistance by a midwife and if necessary by an obstetrician, free medicines and appliances, hospitalization in public hospitals, treatment in health resorts and sanatoria, and also dental treatment. For the latter, however, a special charge is made. These benefits are extended for a period up to 26 weeks which may be extended to 52 weeks. If a case of illness lasts longer, the patient falls under invalidity insurance. Medical care is given through excellent health centers, which in 1936 employed 1182 general practitioners, 213 specialists, and 334 dentists. Two hundred and sixty-nine physicians are full-time employees; the others are engaged on terms of collective contract. The social insurance organization owns and operates 140 dispensaries and 26 sanatoria and convalescent homes. Patients are hospitalized in public hospitals at the expense of the insurance fund. There is no free choice of physician and there is no reason why there should be.

In addition to these services sickness benefit amounting to as much as two thirds of the wages is paid up to 26 weeks and may be extended to 52 weeks.

In case of childbirth a maternity benefit to the extent of two thirds of the wages is paid for six weeks before and six weeks after delivery, and in addition a bonus of 150 dinars is paid in each case of delivery and 4 dinars a day for nursing when maternity benefit ceases. In case of accidents the allowance paid to the insured worker may amount to as much as 100 per cent of the wages. Old-age pension is granted after 70 years of age.

What is the cost of social insurance? Premiums for sickness, invalidity, old-age, and death insurance are contributed by employers and employees in equal amounts, for accident insurance by employers alone. The total amounts to about 10 per cent of the wage bill. The workers are divided into twelve wage groups according to which the premium is determined. The employee's contribution is deducted from wages.

Unemployment insurance is not part of the general scheme but is provided through the labor exchanges.

There can be no doubt that social legislation has reached a high level in Yugoslavia. I visited several health centers and sanatoria operated by social insurance funds and found them the most modern medical institutions in the country, well equipped and well staffed.

DUBROVNIK

The congress left Sarajevo on September 12, and on the way to Dubrovnik our special train stopped for an hour at Mostar, an Oriental-looking city with a famous "Roman bridge," which, however, was built by a Renaissance architect. It is a dreamy town with craftsmen working in their open shops, and the most modern building of the place, symbol of a new time, is the health center of the social insurance organization.

We reached Dubrovnik in the evening, just in time to hear Hitler's violent speech claiming the Sudetenland for Germany, and the ominous *Siegheil's* of his followers. The situation had become extremely tense all over Europe; nervousness was growing daily in Czechoslovakia. Incidents had occurred in the last few days, and Hitler's speech, which openly advocated violence, made the war clouds still darker.

Dubrovnik was crowded with German tourists, and it was impossible to house the members of the congress in one section of the city, so that we were scattered in pensions all over the neighborhood and communication between the various groups became very difficult. We all came together, however, for one more formal exercise on the morning of September 13 to celebrate the memory of one of Dubrovnik's great sons, *Giorgio Baglivi*. We met in the hall of the officers' casino. Professor Pietro Capparoni held the chair. Professor Diepgen, who was to make an address on physical thought in the history of medicine, had given his talk in Zagreb already as he had to leave the congress early to be in time for the meeting of the German Society of the History of Medicine, Science, and Technology. The curator of the *Biblioteca Lancisiana* in Rome, Dr. Alessandro Canezza, gave a flowery address in elegant Latin. I then read a paper on Baglivi and the iatromechanical doctrine, in which I tried to show that Baglivi represents the peak and at the same time the breaking point of the iatromechanical school. In his physiology and pathology Baglivi is an orthodox follower of the school, while in his practice he forgets his theories and calls himself a follower of Hippocrates. In other words, a point had been reached at which theory and practice did no longer conform but went their own ways. Dr. Erik Wal-

ler demonstrated his unique collection of letters of Baglivi, and Professor Lujo Thaller gave the final address of the congress by discussing the philosophic foundations of Baglivi's medicine.

Although Baglivi left Ragusa when he was a young child, he always felt attached to the city in which he was born, on September 8, 1668, "pucherrima et nobilissima Dalmatiae urbe." And indeed Ragusa was a unique city, beautifully built on a rocky peninsula surrounded by walls that remind you of Avignon or Carcassone—a most picturesque city to-day still. Founded by refugees from the Greco-Roman colony of Epidaurus (Cavtat today) who in the seventh century were driven away by the Avars, it increased its population with the immigration of Slavs and soon became one of the most prosperous merchant cities of the Adriatic. Although surrounded by powerful and greedy neighbors, Venice, Hungary, and Turkey, the city-state of Ragusa succeeded through clever negotiations in preserving its independence for a thousand years. It reached the height of its prosperity during the Renaissance and became a cultural center in which Romance and Slav civilization were blended in the best possible way. During the Napoleonic wars Ragusa, like Venice, lost its independence, and the Congress of Vienna made Dalmatia part of the Austrian Empire.

In the afternoon the members of the congress sailed to Cavtat, the birthplace of Ragusa, passing the island Mercana, on which the first quarantine was established in 1377. On July 27 of that year the city council had ordered that all travelers coming from plague-ridden countries should be barred from the city unless they had spent one month on the island *ad purgandum*. Cavtat was founded in 590 B.C. by Corinthians and was given the name Epidaurus. It became the seat of a healing cult, and there is still a cave which, according to traditions, was a sanctuary of Aesculapius. It is needless to say that we visited it, but we found neither the god nor his serpent. We also visited a mausoleum which contains some of Meštrović's best creations, and we were offered a tea by Mrs. Pava Račić-Pasić.

September 14 was the last day of the congress, with a visit to the archives and an excursion to the island of Lokrum on the program, but war seemed so close that most members of the congress hastened to get home. New incidents had occurred in Czechoslovakia; the Sudetens had repudiated the Carlsbad program and were asking for a plebiscite. They had sent an ultimatum to Prague. Czech gendarmes had been killed in the Sudeten area, and it looked on the surface as if war could break out

at any time. The boat that sailed from Dubrovnik to Split was therefore crowded with medical historians.

HEALTH COOPERATIVES

The idea to extend the principles of cooperation to the protection of health materialized in Yugoslavia earlier than in other countries. It found a fervent advocate in Dr. Gavriilo Kojić (1890-1927) who organized the first health cooperative in 1921.¹³ His guiding idea was that a private cooperative organization would have a stronger appeal to the peasant than a government service and would encourage him to take an active part in the health work of his community. It was the correct idea that the protection of the people's health is the concern of the people themselves. The cautious peasant sees in the government primarily the tax collector and believes that nothing good can be expected from it, while the cooperative is the peasant's own affair. Dr. Kojić moreover thought that there would be less bureaucracy in a private than in a state service.

The health cooperatives own and operate their own health centers. They perform curative and preventive work and give a large amount of health education. They endeavor to improve the sanitary conditions of the village in association with the provincial institutes of health, and they have been empowered by law to perform the functions of the parish health councils. They are all affiliated with a Central Union of Health Cooperatives. They are not self-supporting but require state subsidies, and they have been helped repeatedly with American money, particularly from the Milbank Fund. The cooperatives grew slowly but steadily as illustrated by the following figures:

	1925	1931	1936
Number of health cooperatives	21	67	115
Number of members	8386	28,387	57,450
Number of cooperative health centers		48	75
Number of medical examinations		36,180	76,975

In 1936 the cooperatives employed 85 physicians, or more than 1 for every 1000 members. The number of peasants who are members of

¹³ About cooperatives see B. Konstantinović, *La Yougoslavie pour la Santé Publique*, Beograd, 1937, pp. 46-49; A. Štampar, *Public Health in Yugoslavia*, London, 1939, pp. 23-32.

cooperatives is not large, and the groups are small, too small to be self-supporting.

My general impression is that the idea of health cooperatives was good so long as the state services were undeveloped. Today, however, the state health centers do a tremendous amount of educational work also. They too mobilize the entire village in the fight against disease, and there is probably just as much cooperation between the population of a village and its state health center as in a cooperative. The peasant has come to recognize that these government agencies are not enemies but friends. And there is no reason why the peasant should be specially taxed. Health is the responsibility of all, and all should contribute, each one according to his ability. If the development of state health services had continued unhampered by economic and political crises, there would probably have been little demand for cooperatives, but when the development was slowed down considerably cooperatives offered a promising solution.

SPLIT

On September 14, Dr. Moon, Dr. Temkin, and I left Dubrovnik on a Yugoslavian steamer, and toward evening after a beautiful trip along the Dalmatian coast that reminds you so much of Greece we landed in Split—an astounding city built into the ruins of the palace of Diocletian. We went through the Porta Aurea to the place in front of the cathedral, which was built into the mausoleum of Diocletian. It was late, we were tired, and we sat in a little cafe on the Place, the cathedral in front of us and to our right the gigantic statue of Grgur Ninski, one of Meštrović's most impressive creations. Diocletian had persecuted the Christians, but Christianity had triumphed over him. His mausoleum was gone, replaced by a church, and in front of it stands Ninski, who brought Christianity to these shores.

While we sat there the evening papers came with very disturbing news. More incidents had occurred in Czechoslovakia, seventeen Czechs had been killed in the Sudeten area, and Chamberlain had decided to call on Hitler in Berchtesgaden. And so we knew that this would be the end of Czechoslovakia and that one more democracy was going to be sacrificed. Personally I never believed in the imminence of war in western Europe, because at least two nations are required to fight a war and only one seemed actually willing to take the step. France had capitulated to England ever since 1936, when under British pressure it closed its

frontier to Spain, which was being invaded by Germany and Italy. And it was all too apparent that Chamberlain would never go to war with Germany, which was playing his game. He would never agree to see a Russian army in central Europe, and it was well known that Russia was the only country that was ready and willing to live up to its treaty obligations. The internal situation of Germany, moreover, seemed rather precarious. There was no enthusiasm for war of any kind, and the downfall of the Hitler regime was certainly not what Chamberlain could wish for.

Not expecting war, I decided to go back to Zagreb and to spend a few days with Dr. Štampar.

ANDRIJA ŠTAMPAR

I had met him in Moscow in 1936 when he came back from China, where he had spent several years in public health work. I met him again in America in the spring of 1938. One morning he came to my office in despair. He told me that he had a most interesting time in the United States, but that he was meeting nobody but distinguished professors, that he was sick and tired of them and would like to meet young students. This was easy to arrange, and one evening I had a group of students at my home to meet Štampar. He came, a big husky man of 200 pounds, a fighter who is not content with teaching what should be done but wants to do it himself with his own big hands. He sat in an armchair. We crowded around him and asked him to tell us about his work in Yugoslavia. And for several hours he told us a tale that sounded like an epic.

After the World War Yugoslavia was a wreck. Large stretches of land had been devastated, and epidemics were ravaging the country. The task of reconstruction seemed desperately difficult. Štampar was appointed Director of Public Health. He was thirty years old, a graduate of the University of Vienna. He began his work in a health department that consisted of a table and a few chairs. But soon he attracted a group of young doctors whom he inspired and filled with enthusiasm for the task. There were no office hours for these young men and women. They worked day and night. Instruments and apparatus were secured, mostly from Germany on reparation account. Increasing funds were appropriated by the government, and reconstruction proceeded not along old patterns but following new lines. From the very beginning Štampar was

clear in his mind that the protection of the people's health was a primary concern of government, and that medical service must be a public service and not a service sold on the open market to whoever can afford to purchase it. He knew that public health is determined by social and economic conditions, and that it is silly to distribute drugs where food is needed. He therefore approached his task in the broadest possible way, helping the people not only to improve their health but their living and working conditions as well. He also knew that prevention is better than cure, and that if the battle against disease is to be a victory it must be directed planfully by central organs. In other words, he did in Yugoslavia what Semashko was doing at the same time in the Soviet Union. He built institutes of hygiene as directing and coordinating agencies, hospitals, sanatoria, convalescent homes. He built antivenereal, tuberculosis, and malaria stations, school polyclinics, and health centers in towns and villages. He was instrumental in bringing through social insurance legislation, and with the young doctors he had trained he carried a vigorous health campaign all over the country into the remotest villages.

Štampar's work went not without opposition, particularly by members of his own profession, doctors of the older generation. He was taking business away from them. He distributed quinine free of charge where they used to sell it. Twice he was almost murdered, and politicians were mobilized to oppose him. But as long as the country had a parliament the peasants were backing him. They were the source of his strength. He loved them with every fiber of his heart. He knew that they were the backbone of the country, that they needed health more than anybody else. And they knew that he was one of them. They stuck together, worked together, to raise the material and cultural standard of the country. The work succeeded. The people were awakened to become conscious of health. One institution after another was built until 300 of them had been constructed.

And then came the year 1929. Parliament was dissolved, the constitution scrapped. The peasants lost their voice in government and Štampar their support. The reactionary forces could now oppose him more strongly, and one day he was driven out of office. But his work was so firmly established that it could not be destroyed. His students carried on, and how they venerate him. Wherever I met them, all over the country, they spoke of him lovingly, often with tears in their eyes.

Semashko and Štampar both had the same concept of public health.

In the Soviet Union, due to the social and economic structure of the country, the work can proceed steadily without any interruptions. The totally different conditions of Yugoslavia brusquely interrupted a development that was most promising. Štampar left the country and went to China. His own government did not want him, but there were other people in the world, peasants also, who needed his help. He spent three years there traveling all over the country, advising, helping wherever he could, and at the end he wrote several most illuminating reports on the public health situation of various districts with practical suggestions on how to improve it. For a while Štampar worked with the health section of the League of Nations in Geneva, but he is not an office worker. He was offered a chair of hygiene in his country, but he refused it. He is a man of action, not of words.

He lives in Zagreb now with his family. I met him in his study. Mongolian rugs adorn the walls, and there are books wherever you look. He sits there and studies. Health reports from all over the world are sent to him, and he keeps track of every health development in every country. He writes. People come and seek his advice. And from time to time he goes to the villages, meets his peasant friends, and sees the works that he has created. His time will come again. No country can afford to waste such a dynamic power.

Štampar has summarized his views on public health in the following nine theses¹⁴

- (1) The education of the people is more important than laws and for this reason our work [in Yugoslavia] is based upon three small laws only
- (2) It is most important to prepare a correct attitude of society towards questions of public health
- (3) The question of public health and of the work done for its advancement is not a monopoly of the doctors, but everyone, without distinction, should take part in it. It is only by means of this universal co-operation that public health can improve.
- (4) A doctor should be mainly a social worker, he cannot go far with individual therapy alone—social therapy provides the means that can lead him to real achievement
- (5) A doctor should not be economically dependent on his patients because such dependence hinders him in the most fundamental of his tasks
- (6) In respect of public health no distinction should be made between the rich and the poor
- (7) It is necessary to create a health organization in which the doctor shall seek out the patient, and not the patient the doctor, for it is only by so doing that the ever-increasing numbers of those whose health we should protect can be included in our care
- (8) A doctor should be a teacher of the people
- (9) The question of public health has more of an economic than a humanitarian significance. The chief place

¹⁴ *Public Health in Yugoslavia*, London 1953, p. 9. See also A. Štampar, *Deset Godina Unapređivanja Narodnog Zdravlja*, Zagreb, 1954.

for a doctor's work is in the dwellings of the people—the places where men live and work—and not in laboratories or in a doctor's consulting-rooms.

With Štampar I went to visit one of his most important creations, the *School of Public Health in Zagreb*.¹⁵ It was founded in 1927 and built on a Rockefeller grant of \$200,000. It works in close cooperation with the provincial institute of hygiene, both being located side by side on top of a hill. Both are very ably directed today by one of Štampar's closest co-workers, Dr. Berislav Borčić. The institute of hygiene has a department for bacteriology and epidemiology, one for chemistry, and a hospital of infectious diseases. A tuberculosis dispensary and a polyclinic for students of the secondary schools are attached to it. The School of Public Health has a department for field surveys that studies the social, economic, and health conditions of various districts and a department for health education that carries on a continuous campaign through lectures, exhibits, movies, posters, and all means of modern health propaganda. A department for sanitary engineering makes plans for water supplies, wells, latrines, and dwellings and maintains a laboratory for water analyses. And finally there is a special department for the preparation of biological products that provides part of the income of the school. In recent years this department began to produce insulin and arsenobenzol preparations that are obviously infinitely cheaper than the imported German preparations.

Like other schools of public health the Zagreb school trains public health officers, school health officers, health visitors, health inspectors, sanitary engineers, and it gives courses in social medicine for the health officers who are preparing themselves to work in social insurance institutions. The school, however, does infinitely more, and it has a program that I have never seen in any country before. It trains peasants. Peasants from the villages come, men for a course of five months, women for three months. They are housed in special quarters provided by the school, and during the course they are given instruction not only in public health but in history, geography, economics, and agriculture. Back in their villages these peasants become the pioneers of health, the health conscience of the village. They instruct and advise their fellow peasants and are the most valuable co-workers of the health officers. They know the local conditions best and know better than any doctor possibly

¹⁵ *The Yugoslav Institutes of Hygiene and the School of Public Health*, League of Nations, Bulletin of the Health Organisation, 1938, vol. VII, pp. 407-427.

could where help is needed most urgently. Again this is the correct idea that disease has to be fought not by doctors alone but by the entire population. The school also organizes courses in housekeeping for women in the villages during the autumn and winter months, and during such a course the peasant women are taught the elements of hygiene.

I also visited the School Polyclinic of Zagreb, which is directed by Dr. Štampar's wife, herself a very able physician and social worker and a fighter in her own field as he is. The polyclinic is open to all students of the secondary schools of Zagreb. Teachers have periodic examinations every four years. Treatments are free for all, and the school gives not only medical services but has a kitchen and dining room in which hundreds of needy children receive meals.

I then had the great privilege to travel for two days with Dr. Štampar and Dr. Borčić through Croatian villages. I was most anxious to see villages, to meet peasants, and to have a glimpse of the health work achieved in the rural districts. There is a tremendous movement in the Croatian peasantry. They are awakened today and are beginning to reflect about the hardship of their lives. They know that if they want to see conditions improve they must do it themselves, and they know that this requires education. There is a real thirst for knowledge among them, and numerous societies have been organized to spread education in the villages. Illiteracy is still high, but there is a plan to overcome it within five years and young people set out with great enthusiasm to teach their elders to read and write. The strong spiritual forces of the Croatian peasantry that for centuries found expression in the beautiful creations of their handicraft have now produced poets, painters, sculptors—simple folk, peasants they too—who in their works express the aspirations of their people, their joys and sorrows. I had the great pleasure to meet one of them, the peasant-poet Miškina. In plain words but most persuasively he told his story. He is a poor peasant; his farm consists of a house and two hectares of land. When the brother of Radić died, he felt so overwhelmingly sad that he had to do something about it. He went to the stables to hide and freed his soul by writing on a bit of wrapping paper what he felt. And for three years he wrote in the same way, hidden in the stables. He was ashamed. He felt that what he was doing was not normal, was not what a peasant should do. He was afraid that his wife would laugh at him and scold him. And one evening she found him writing in the stables. To appease her and to justify himself, he began

to read to her what he had written. For hours they sat in the stables and under the flickering light of a candle he read and she listened, and her eyes were filled with tears. From then on he could write openly in the house, and many of his creations, poems, essays, novels, describing the life of the peasant were published under various pseudonyms. Miškina is one of Croatia's great poets today, and he is by no means alone.

The village Mraclin that we visited was used as a test ground by the School of Public Health. It has a health center with a public health nurse in attendance. The doctor comes twice a week. Another doctor lives in a community not far from the village and can be called in cases of emergency. The village is very well equipped with wells, latrines, well-arranged dung heaps, and makes a very good impression. I was interested in seeing several orphan children who were in care of peasant families. Such families are very carefully selected by the health authorities. They receive 125 dinars a month, and the infant and his surroundings are under the permanent supervision of the health authorities. It is considered an honor for a family to be entrusted with such an orphan child, and it gives it much prestige in the village. While we walked through the village we saw a group of young men bowling in one of the gardens. Štampar could not resist. He threw off his coat and bowled with them.

The next day we drove from Zagreb to Ljubljana and visited other health centers and public health institutions in Rogatec, Celje, Lukovica. Everywhere I found a well-equipped Zdravstveni Dom, "home of health," as the health centers are called. All these centers give not only examinations and treatments but they are all centers of health education. They all have bath tubs and showers. One that I visited even had an open air swimming pool. And they all have kitchens that provide meals for school children. They are therefore health institutions in the broadest sense of the word. I have a tremendous admiration for the public health nurses that I met in these centers. They are well-trained young women who assume great responsibility. As a rule the doctor comes only two or three times a week so that they have to develop much personal initiative. They first of all must gain the confidence of the peasant, and the popularity a health center enjoys depends to a large extent on them. They have the same salaries as school teachers, 800 to 1100 dinars a month and free room and board, but they work harder and have shorter vacations.

We visited the health resort Rogaška Slatina and the tuberculosis

sanatorium in Topolsica, an excellent sanatorium of about three hundred beds located in a beautiful landscape in the midst of hills and woods. The director of the sanatorium, Dr. V. Savić, is an excellent surgeon and has very good operative results. The patients stay in the sanatorium for 88 days on an average. Needless to say, the sanatorium is a state institution.

And finally we went to Ljubljana, the capital of Slovenia. We visited the Institute for Mother and Child, where not only sick infants but their mothers are admitted as well. The ambulatorium is open to all, and I saw a gipsy next to a general's wife. We visited the provincial institute of hygiene and the nurses' school and saw the new building of the school clinic that is just being completed in excellent style. It is Štampar's last creation. The last decree he signed before he left office was the one that appropriated funds for this clinic.

My Yugoslavian tour, short as it was, was a great and valuable experience. And what impressed me most was to see the creations of Štampar and Meštrović. They are the two men who have made Yugoslavia famous and admired in the world. They do not exploit their fellow men but spread health, beauty, and happiness. Wherever you travel you find the creations of Meštrović, the buildings, the statues, the monuments with which he has enriched his country. And wherever you travel you find the creations of Štampar, the three hundred medical institutions that he has erected to lead his people to a better and happier life. Meštrović has carved the Yugoslavian men and women in stone, their destinies, their sufferings and joys. Štampar has carved the smile in the face of the mother whose child he saved and has erected for himself a monument in the heart of the Yugoslavian peasantry. Nobody knows what the future of Yugoslavia will be, but I know that the creations of these two men will live forever.

FROM BISMARCK TO BEVERIDGE: DEVELOPMENTS AND TRENDS IN SOCIAL SECURITY LEGISLATION



INTRODUCTION

THE second World War, following logically a protracted period of world economic depression, has given increased significance to the problem of social security. The many millions of working men and farmers serving in the armed forces of every country and the millions of workers engaged in vital industries are justified in asking what their future will be if they survive the war. Will it be a return to the misery of unemployment, to the dole, the means test, and ill-paid relief work? Or, having accepted the duty to work, will they have the right to work and, through their labor, to acquire security for themselves and their families? Will they be able to obtain security while preserving and improving their democratic institutions, or will the price for it be the acceptance of tyranny?

Basic issues can be dodged in a short war but not in a long one like that in which we are engaged. Social security is the major domestic war aim of every country that has not yet solved the problem. But it has far more than domestic significance: the very issue of the war may depend on its solution, because it is not machines that win battles but the spirit and determination of the men who make and handle them.

.....

At the height of the second World War, postwar planning for social welfare brought forth the Beveridge report in Great Britain and other documents elsewhere. As a contribution to increased understanding of the social security idea, Dr Sigerist began a series of papers on the European backgrounds of the movement. This first paper in the series—which unfortunately was not continued—traced the origins of health insurance and related programs in nineteenth century Germany. The paper was published in the *Bulletin of the History of Medicine* 8,365-388, April, 1943.

Social security is implicitly included in the Atlantic Charter. Freedom from want will remain an empty promise unless concrete steps are taken now for its realization. It is a great fallacy to believe that this is a postwar issue that can wait until the war has been won. It is as urgent today as the production of airplanes and tanks. With every war people will become more restless and will more strongly resent promises that are not kept. If we have not the intelligence and courage to plan for the future now and make the adjustments that our industrial society requires, the people will take their destinies into their own hands.

Aware of the situation, the British government on June 10, 1941, requested Sir William Beveridge "to undertake, with special reference to interrelation of the schemes, a survey of the existing national schemes of social insurance and allied services, including workmen's compensation, and to make recommendations." After eighteen months of intensive work, on November 20, 1942, Sir William submitted his report. His recommendations probably far exceeded what the government had expected.

In the United States a few months later, in March, 1943, President Roosevelt sent to Congress a report on security, work, and relief policies which had been prepared after three years' labor by the National Resources Planning Board.

The significance of these two documents cannot be estimated highly enough. They are the most important documents that have come from this war. The Atlantic Charter is a vague program, a promise, a hope at best, while these documents pave the way for legislative action and make it possible to put some of the points of the charter into practice. Not only the British Parliament and the United States Congress will have to discuss these plans at length, but every responsible citizen in the two countries must make up his mind in regard to them. They should be made the subject of debates in schools, factories, farms, and clubs, and everyone should realize that the *immediate future is at stake*.

Both documents are long and highly technical. They must be so because plans are worthless unless they are built upon the solid foundation of facts and figures. But to the average citizen, and even to the one who has political education, they are bewildering because the issue is so big and because the forces that are at play are not always apparent.

We must be aware of the fact that both plans do not in any way represent novel departures. They are by no means revolutionary, but take merely one more step in a development that began sixty years ago. It

seems to me, therefore, that a historical analysis of this development and of the trends involved may help us in clarifying our thought.

It is strange that the history of so significant an aspect of western civilization has not been written exhaustively as yet. We, of course, possess a great number of excellent books that discuss the social insurance systems of various countries, but we still lack an adequate historical presentation.

The series of short articles that I am beginning today cannot possibly fill the gap, but I hope that they will stimulate further research in the field. Their purpose is not to discuss technicalities of social insurance but rather to analyze the economic, social, and political forces which at a given moment of history prevailed in a given country and led to the enactment of social security legislation. History does repeat itself, every day, under our very eyes—and we can learn a great deal from it.

THE PERIOD OF BISMARCK

We must begin with Germany because the pioneering step in social security legislation was taken in that country. Bismarck was the driving spirit who, against great opposition, created the first comprehensive social insurance system and thus initiated a movement which rapidly spread from one country to another.

Social insurance is a result of the industrialization of the world. In the feudal society of the Middle Ages, the economically weak individual was the responsibility of his lord or was an object of charity. The idea of mutual insurance took root with the disintegration of feudalism. In the late Middle Ages already craftsmen's guilds organized mutual benefit funds; the miners, somewhat later, formed brotherhoods that served a similar purpose. When the guilds lost their political power, they nevertheless preserved in many cases their welfare institutions.

The development of capitalism greatly increased the insecurity of the working class, and the situation became very acute in the nineteenth century after the Industrial Revolution. Millions of people depended on the labor market for a living. Working long hours on wages too low to permit savings, exposed to many hazards, they were thrown out of work by accidents, disease, old age, and by the periodic economic crises that are inherent in capitalist production. Without reserves from which to draw, they became public charges, recipients of a charity that was unable to cope with a problem of such magnitude.

Following the example of the artisans, the industrial workers organized mutual aid societies. They were voluntary, reached only relatively small groups, and were not strong enough to protect their members sufficiently. It is no wonder that the working class became dissatisfied with a system that took so much from them and gave them so little in exchange, not even a minimum amount of security. On the other hand, it was not in the interest of society to carry along masses of disabled indigents. In every country the moment came when some sort of a solution had to be found.

§

Bismarck did not create his social insurance scheme from a void.¹ He built on the basis of the already existing institutions² and also—unconsciously—drew from the ideas of the revolution of 1848 which he so deeply abhorred.

Before Bismarck's legislation, the protection of working people in Germany was provided from three different sources. One of them was the employer's liability for compensation in case of accidents. It was based on an old concept of Roman law but was in most cases illusory because the employee had to sue for damages and had to prove in court that the injury was due to negligence or the fault of the employer.

In 1838 the first railroad line was built in Prussia, from Berlin to Potsdam. The same year a law was passed that made railroad companies liable for accidents and compelled them to compensate injured persons, employees and passengers, unless the company could prove that an accident was caused by negligence of the victim or by an "act of God." After the unification of Germany, an imperial statute enacted in 1871 extended the same liability to other industrial undertakings such as mines, quarries, and factories.

The law required shipowners to provide sustenance and medical care to diseased sailors irrespective of negligence, except in the case of illicit

¹ The literature on Bismarck is endless. Most important are the collections of documents edited by H. von Poschinger, *Fürst Bismarck als Volkswirt*, Berlin, 1889 1891, 3 volumes; *Aktenstücke zur Wirtschaftspolitik des Fürsten Bismarck*, Berlin, 1890 1891, 2 volumes; *Fürst Bismarck und die Parlamentarier*, Breslau, 1894 1895, 3 volumes; *Fürst Bismarck und der Bundesrat* (1867 1890), Stuttgart and Leipzig, 1896 1901, 5 volumes. See also Arthur Böhtlingk, *Bismarck als Nationalökonom und Sozialpolitiker*, Leipzig, n. d.

² Lujo Brentano, *Die Arbeiterversicherung gemäß der heutigen Wirtschaftsordnung*, Leipzig, 1879; Ernst Hunkel, *Fürst Bismarck und die Arbeiterversicherung*, Thess, Erlangen, 1909; Alfred Manes, *Sozialversicherung*, Berlin and Leipzig, 1926.

action and venereal infection. Commercial employees were entitled by law to six weeks' wages if they were disabled without their fault, but the employer could waive such obligation by contract. Domestic servants had to be given medical attention in case of illness, and the cost could be deducted from their wages by the employer.

These were all legal regulations which imposed definite duties upon the employers. Welfare institutions of a totally different kind were the mutual benefit societies, organized by the wage earners themselves in the German states just as in England, the United States, and other countries. In Germany, however, these organizations developed along a different line. We already mentioned the miners' brotherhoods. They provided sickness, disability and funeral benefits, and pensions to widows. For centuries they were voluntary organizations, but a Prussian statute of 1854 made membership in such a benefit society compulsory. Contributions amounted to a percentage of the wages and were deducted by the employer who himself had to contribute an amount equal to at least one half of the sum paid in by the workers. The funds were administered jointly by employers and employees.

Journeymen had similar mutual benefit societies, and a statute of 1845 empowered communities to require membership in such a society from all journeymen domiciled in the place. In 1849 communities were further entitled to urge employers to join these societies and to contribute up to one half of the amounts paid in, and at the same time the regulations were extended to factory workers. In 1854 the districts were given the power to enforce the organization of benefit societies and to set dues in case the communities failed to do so.

In other words, the idea of compulsory insurance was accepted in Germany long before Bismarck, although it was applied only in a very limited way.

Another group of welfare measures was vested in the state, namely, poor relief. It was delegated to the communities, whose obligation it was to provide sustenance, medical care, and a funeral to citizens unable to support themselves or to be supported by other individuals. Poor relief was a matter of public charity to which no one had a legal right, and the recipient of relief was deprived of his civic rights.

In Bavaria, Baden, and Wurttemberg, communities were authorized from 1869 on to establish public sickness insurance funds, membership in which could be made compulsory for all unmarried wage earners who were not living with their parents.

The revolution of 1848 in Germany was a movement of the liberal middle class. The country was in the birth pains of industrialization. Mining, the metallurgical industries, and transportation were undergoing a rapidly increasing development, creating wealth for a few and misery for many. The liberal movement that sprang up in the years preceding the revolution was directed against feudal privileges and clerical obscurantism and fought for a union of the German states, for parliamentary government, and for the improvement of social conditions.

Physicians took a leading part in the movement.³ They were fully aware of the health hazards created by the new economic order and were convinced that the problems could not be solved without a thorough reform of medical services. They postulated the people's right to health and the duty of the state to protect health "as its most precious property." They called for vastly improved public medical services for the indigents, for an increase in hospital facilities whereby the hospital was to become the center of medical practice. At that early time voices were already raised to ask for compensation for the loss of wages due to illness and to demand sickness insurance financed by contributions from the workers and from the propertied classes with municipal and state subsidies.

The revolution failed and was followed by a period of dark reaction, but the ideas that had been formulated could not be killed since they were the result of a powerful economic development that could not be undone.

Thus the stage was set for Bismarck's plans of social insurance, and we must now analyze the political forces that were at play and made it possible for the plans to be put into practice.

§

In 1862 Bismarck became Prime Minister of Prussia. The aim of his policy was to mould the thirty-odd German states into a strong empire under the leadership of the Prussian monarchy. This required first that Austria be driven out of Germany. In 1866 Austria and her South German allies were defeated in a war that lasted only a few weeks. The ties between the German states and the Habsburg monarchy were cut, and the North German Confederation was established in 1867 with a parliament (*Reichstag*) elected by universal, equal, secret, and direct suffrage, and a federal council (*Bundesrat*) in which the governments of the con-

³ Erwin H. Ackerknecht, "Beiträge zur Geschichte der Medizinalreform von 1848," *Sudhoff's Archiv für Geschichte der Medizin* 25: 61, 109, 113, 183, 1932.

stituent states were represented.⁴ At the same time an alliance was made with the South German states.

In the war of 1870-1871, France, the strongest power on the European continent, was defeated, and in January, 1871, the German Empire was founded in Versailles. The King of Prussia, William I, became Emperor of Germany, with Bismarck his Chancellor. The constitution of the empire followed closely that of the North German Confederation.

Bismarck had been playing a hazardous game, but his political acumen backed by the powerful Prussian army had won. He had succeeded in creating a united nation under Prussian leadership, and the country, freed from all interstate barriers, was ready to develop into the strongest industrial power of the continent.

In the years immediately following the war, capital was easily available. France had paid an indemnity of five billion francs, an enormous amount in those days, much of which was invested in new industries, mines, factories, and railroads. Money was cheap and prices therefore high. The workers struck for higher wages. The industrialists and farmers called for protective tariffs, a measure that was opposed by the working class since it would raise prices on the domestic market. Social unrest increased when, after a short period of postwar boom, an economic crisis developed at the end of 1874 which led into a long period of depression. The time was ripe for social legislation.

Bismarck was a member of the Prussian landed aristocracy. He was a feudal landowner who disliked the large cities and still more the bankers and industrialists. He felt ill at ease in the world of ruthless competition that developed around him. He and his friends of the Conservative Party had the feudal paternalistic attitude toward poverty. They thought that it was the duty of the lord to help the poor, and, since protestantism was part of their philosophical and political equipment, they called it the Christian attitude. They identified themselves with the state—the monarch was one of their class—and therefore were in favor of having the state power used to provide social security to the economically weak. Their representation in the *Reichstag* was not large,⁵ but they had great influence, nevertheless, because they controlled the court and the army.

The Liberals were by far the largest parliamentary group. They were

⁴ Prussia had 17, the other states together had 26, voices. The members of the *Bundesrat* were not elected but delegated by their governments and voted by instruction.

⁵ They had 54 of 382 seats in 1871, 21 of 397 in 1874, and 80 of 397 in 1887. The German *Reichstag* began with twelve political parties represented in 1871 and ended with twelve parties in 1932. It had fifteen parties represented in 1930.

very different from the Liberals of 1848, as a result of the economic development that Germany had undergone in thirty years' time. They represented the middle class and therefore the interests of finance, industry, and commerce. They were ready to call on the state when they needed tariff protection but otherwise advocated the policy of *laissez faire, laissez aller*. In the teeth of economic depression they had the nerve to claim that industry could provide employment and prosperity for all if the government did not interfere with the normal play of economic forces. They were the most violent opponents of Bismarck's legislation.

An intermediary position full of contradictions was held by the Catholic party of the Center, in which Bavaria and the Rhineland were strongly represented. Philosophically the party was conservative, and in its medievalism had much in common with the Conservative Party. But it was anti-Prussian, and Bismarck tried to crush it in the so-called *Kulturkampf*, the struggle between the state and the Catholic Church that raged in the eighteen seventies and in which Bismarck was defeated. Then, after he had given in, the Center supported his social legislation. Strongly opportunistic, the Center took good advantage of its position between the Conservatives and Liberals, and, although it rarely had more than one hundred members in the *Reichstag*, it always managed to play an important rôle.

The third political force was represented by the Social Democratic Party.⁶ A young party, small, with few members in parliament but with brilliant minds, men like Bebel and Liebknecht, it was an articulate and conspicuous group because it was a revolutionary party whose political philosophy was opposed to that of all other groups. It represented the industrial workers and had tremendous potentialities at a time when industries were growing like mushrooms. In the elections of 1871 the socialists won only one seat, but they had nine in 1874, twelve in 1877, and it seemed likely that they would continue to grow if nothing stopped them.

In Germany we find the rather unusual situation that trade unionism did not precede but followed the organization of socialist workers' associations. Trade unions are never very radical because they have an immediate day by day task to fulfill. Their goal is not to change the social order, but rather through collective bargaining and strikes, if necessary, to win immediate gains for improving the condition of the laboring class.

⁶ See Franz Mehring, *Geschichte der deutschen Sozialdemokratie*, Stuttgart, 1897 1898, 2 volumes.

In many countries, therefore, the trade unions acted as a brake rather than a stimulus to the socialist movement.

This was not the case in Germany, where trade unions did not come into existence before 1868, while there was a great deal of socialist agitation among the workers of Saxony and the Rhineland in 1848-1849, and Lassalle founded the Universal German Workingmen's Association (*Allgemeiner Deutscher Arbeiterverband*) in 1863. It was a socialist party but was mild enough because it still had to fight for such elementary rights as universal suffrage. In 1869, however, Bebel and Liebknecht, both followers of Marx, founded the Social Democratic Workingmen's Party (*Sozialdemokratische Arbeiterpartei*), which was affiliated with the First International and in 1875 absorbed Lassalle's group. It was from the beginning a revolutionary party that did not compromise with the government.

It may be mentioned in this connection that Germany from 1849 on had a rapidly developing cooperative movement, the leaders of which were Schulze-Delitzsch and Raiffeisen. The movement, however, had no connection with socialism, was not in any way popular with the laborers, and appealed primarily to the low middle class and small farmers.

From 1875 on the Social Democratic Party was the only group that represented the industrial workers of Germany. Its membership was increasing from year to year. Bismarck was fully aware of the menace it presented to his regime and decided to destroy it before it became too strong. The Paris Commune of 1871, in spite of its swift collapse, had demonstrated that socialism was not a dream of philosophers but might become a tangible reality.

The opportunity to strike that Bismarck had been seeking came suddenly when in May, 1878, a shot was fired at the old Emperor by an irresponsible, completely unbalanced individual who once had been a member of the Social Democratic Party but had been expelled from it. Without delay Bismarck brought an act before the *Reichstag* which virtually outlawed all organizations that had any socialist tendency. It was defeated by the votes of the Liberals, who were not anxious to see a police regime established, but at this very moment, in June, a second attempt was made on the Emperor's life and this time he was seriously wounded. The man who perpetrated the crime committed suicide on the spot, and it made no difference that he was not a socialist and had no connections with the Social Democratic Party; Bismarck was determined not to let this second opportunity pass by, and at the same time he

wanted to strike a blow at his Liberal opponents. He dissolved the *Reichstag*.

The elections took place in an atmosphere of tremendous excitement of repression and 'white terror'. The workers stuck to their guns. In Berlin they almost doubled their vote, and nationally they lost only three of their twelve seats. The chief sufferers were the Liberals who lost about forty seats to the Conservatives.

In October this new *Reichstag* passed the Socialists Act, which deprived all socialist groups of freedom of assembly, freedom of the press, and practically strangled all their activities. It was enacted for a period of two and a half years, was re-enacted several times, and was in force until 1890, the year of Bismarck's retirement.

Bismarck had won, or at least it looked as if he had won. He had failed in his conflict with the Catholic Church, but he had succeeded in smashing the socialist organizations of the country. He was much too clever a statesman, however, to believe that a strong popular movement could be simply suppressed by parliamentary acts and police regulations, by violence and terror. He realized that the workers of Germany had good reasons for being opposed to the government and for seeking a different social order. He clearly saw that one of their major grievances was the insecurity in which they found themselves in an economy that produced in fits and starts periods of boom and depression and was unable to guarantee steady employment. The specter of unemployment haunted them constantly. Not only economic crises but disease and accidents were permanent threats. They disabled a man and made him unemployable, temporarily or permanently. And old age was always looming with no savings upon which to rely, making a man a burden to his relatives or, after a long life's laboring, a recipient of degrading public charity. It was no wonder that people were struggling for an economy that would give them not only the duty but the right to work and that would entitle them to security.

Bismarck set out to give the people this security and in so doing he expected to take the wind out of the sails of the socialist movement and to destroy it even more effectively than by the Socialists Act.

§

As early as 1849 Bismarck in an address said: "The social insecurity of the worker is the real cause of their being a peril to the state."¹ And in

¹ Rede im Vereinigten Landtag vom 18. Oktober 1849.

1871 in a letter to the Minister of Commerce, Count Itzenplitz, he pointed out that the only way to stop the socialist movement in its present aberration was by fulfilling the socialist claims so far as they seemed justified and so far as it could be done within the framework of the existing political and social organization.⁸

What Bismarck had in mind was a centralized and unified system of insurance that would protect all economically weak groups, including agricultural workers, from major risks by providing compensation and services. It was to be financed by contributions of employers and employees and by government subsidies. Government charity was to become a government subsidy. The various occupational groups would be organized into corporations which would administer the insurance system.

It was obvious that such a far-reaching scheme would not be accepted by the *Reichstag* immediately, and Bismarck was well aware that he would have to introduce it gradually. Since the protection against the risk of accidents was the most urgent task, it was logical to begin with industrial accident insurance.⁹

The first bill was brought before the *Bundesrat* on January 15, 1881, and was referred to the *Reichstag* on March 8. It provided compulsory insurance for all industrial employees earning not more than 2000 marks a year. Two thirds of the premium were to be contributed by the employers, one third by the state in the case of workers earning 750 marks or less, while one third was to be contributed by workers earning from 750 to 1000 marks. If annual wages amounted to from 1000 to 2000 marks, the premiums were to be contributed in an equal amount by employers and employees. Benefits provided the costs of treatment and compensation, beginning with the fifth week, whereby the idea was that the existing mutual benefit societies should contribute for the first four weeks. In other words, the system protected the worker only in case of serious accident. If an accident resulted in death, the fund provided the cost of burial and an annuity to the widow amounting to 20 per cent of wages plus 15 per cent for every child under 15 years of age.

The insurance was to be vested in a special government bank, and Bismarck justified this by saying that private insurance companies were

⁸ H. von Poschinger, *Aktenstücke zur Wirtschaftspolitik des Fürsten Bismarck*, Berlin, 1890 1891, vol. 1, p. 164.

⁹ The early literature is listed and discussed in A. von Miaskowsky, "Zur Geschichte und Literatur des Arbeiterversicherungswesens in Deutschland," *Jahrbücher für Nationalökonomie und Statistik*, Neue Folge, vol. IV, 1882, pp. 474 496.

too expensive since they had to earn dividends and that they, moreover, were not safe enough

The bill had the support of the Conservatives but was defeated by the vote of the Liberals. Since they represented the interests of the private insurance companies, they were opposed to having the insurance vested in a nonprofit government institution and also rejected the plan of a government subsidy. They were in principle against government interference except, of course, when it served their own immediate interests.

The Social Democrats also opposed the bill. How could they have confidence in the policy of a man who had just outlawed their organizations and was determined to destroy them altogether? They had no objection to the idea of a centralized insurance fund but were not in favor of government subsidies. They held the view that the cost of accident insurance must be considered part of the cost of production, that premiums therefore should be contributed by the employers alone, and that subsidies would amount to a straight gift from the government to industry.

Thus Bismarck's first attempt ended in defeat, but he did not give in. Elections were pending and social insurance was the major issue. Bismarck combined it with the plan of a tobacco monopoly which was to provide the funds required for the government subsidy. The elections turned entirely against Bismarck. In spite of the Socialists' Act that deprived the workers of the freedoms of assembly and press, they increased their vote and gained three mandates so that they again had twelve seats. The two conservative parties lost forty-eight seats to the Liberals.

But Bismarck was stubborn and used every means of pressure to put his policy through. When the *Reichstag* convened on November 17, 1881, it was opened with a message from the throne—drafted by Bismarck—in which the old Emperor emphasized the importance of social legislation and documented his solidarity with the policy of his Chancellor. The message said among other things:

In February of this year we have already expressed our conviction that the healing of the social evils cannot be sought in the repression of social-democratic excesses exclusively but must equally be sought in the positive promotion of the workers' welfare. We consider it our duty as Emperor to recommend this task again warmly to the *Reichstag*. With all the greater satisfaction would we look back to all the success with which God has so apparently blessed our Reign if we succeeded when the time comes in carrying along the knowledge that we have left to the fatherland.

new and lasting guarantees for its internal peace, and to the needy more security and a larger volume of the assistance to which they are entitled. In our efforts tending in this direction we can count on the agreement of all allied governments and we have confidence that the *Reichstag* will lend its support irrespective of party lines.

To this end the draft bill on workers' insurance against industrial accidents presented in the previous session by the allied governments is now being revised in accordance with the debates held on the subject in the *Reichstag*, so as to prepare for its renewed discussion. A supplementary bill will be presented with it which has for its purpose the uniform organization of industrial sickness insurance. But those people who become unemployable on account of age and invalidity also have a well founded claim on the community to a higher measure of state assistance than was granted to them in the past.

To find the right ways and means for such assistance is a difficult, but also one of the highest, tasks of every community that builds on the ethical foundation of Christian social life. The closer approach to the real forces of this social life and their integration in the form of cooperative associations¹⁰ under state protection and with state support will, so we hope, permit also the solution of tasks which the state power alone could not master in equal measure. But even in such a way it will not be possible to reach the goal without the appropriation of considerable funds.

The language of this message was unmistakably clear. Through the Emperor's voice Bismarck announced that he wished to obtain not only an accident insurance but a system of insurances that would cover the workers against all major risks.

As a first step Bismarck decided to supplement the Accident Insurance Act with a Sickness Insurance Act and to bring the two bills before the *Reichstag* during the same legislative period. It took some time to draft and revise the bills since additional statistical information had to be gathered. The Liberals meanwhile made a last attempt to prevent social insurance legislation by introducing a bill for the extension of the Employers' Liability Act. It was endorsed by 144 Liberal deputies, but the time was too advanced and the bill died in the committee stage.

Bismarck's two bills were whipped through the *Bundesrat* within a few weeks and came before the *Reichstag* in the spring of 1882. His sole endeavor, at the moment, was to get some legislative action so that the ball would start rolling, and, since he could count only on Conservative support, he was prepared to make and, as a matter of fact, had already made far-reaching concessions. He felt that, once he had a bill passed, he would be able to improve it gradually through amendments.

The debates were long and arduous. The Liberals fought for the

¹⁰ *Korporative Genossenschaften.*

preservation of the sacred principles of individualism and *laissez faire*, and called Bismarck a socialist—Bismarck who was out to destroy the socialist movement.

The Social Democrats opposed the bills for other reasons. They pointed out that the highly advertised "social reform" was actually nothing but organized poor relief. They spoke of a "beggars' insurance," one that would merely prevent the worker from becoming a beggar, while making him pay for what he received. They further pointed out that the bills did not solve any problem of the laboring class, that they did not attack the causes of misery but only their results, and that they represented only an attempt to bribe the workers into complacency. The Social Democrats made a number of constructive suggestions. They wanted not only compensation for industrial accidents but prevention, by having strict factory laws and factory inspection. They were not opposed to compulsory sickness insurance and were willing to have the employees contribute the entire costs, provided the funds remained under workers' control. They realized that they would lose control over the mutual benefit funds established by the trade unions as soon as the employers were required to make contributions.

After debates of over one year the Sickness Insurance Act, being much less controversial, was passed and became the law on June 15, 1883. Bismarck, of course, would have liked to have a uniform, centralized sickness insurance organization. Realizing that such a scheme would never obtain a parliamentary majority, he compromised, and the bill permitted that use be made of the infinite variety of existing private sickness benefit societies. The only conditions were that these funds would provide minimum benefits set by law, that they would present annual reports, and would invest their funds in accordance with certain regulations.

The act required workers engaged in listed occupations to be insured with one of the existing funds or one to be created for the purpose. Two thirds of the premiums were contributed by the workers, one third by the employers, and the funds were administered by both groups in proportion to the contributions made. The benefits included medical care and sickness money in case of illness and also in case of accident during the first thirteen weeks, i. e., before accident insurance became effective, and in addition maternity and funeral benefits.¹¹

¹¹ For details see Barbara Nachtrieb Armstrong, *Insuring the Essentials*, New York, 1932, p. 303 ff.; I. S. Falk, *Security Against Sickness*, Garden City, N.Y., 1936, p. 93 ff.

German sickness insurance always suffered from a lack of uniformity, since large and prosperous funds were able to offer many additional benefits that smaller funds could not provide. This shortcoming was not due to a lack of wisdom on the part of Bismarck, but merely to the parliamentary constellation that prevailed in the year 1882 to 1883, and no regime from Bismarck to Hitler was able to change it basically, although many improvements were made in the course of time.

The industrial accident insurance was much more controversial because it represented a much more radical departure from the traditional ways of employers' liability. The parliamentary discussion dragged on and on. The old Emperor was mobilized again. In his message from the throne of April 14, 1883, he expressed his satisfaction with the progress achieved in the case of sickness insurance and his disappointment that the work on the more important accident insurance bill was not more advanced.

Bismarck made one concession after another in order to get the bill through. In the second draft introduced before the *Reichstag* on May 8, 1882, he had dropped his original plan of a central insurance fund, but still insisted on a government subsidy of 25 per cent of the costs and on having the contributions shared by employers and employees. The third draft that came before the *Reichstag* on March 6, 1884, no longer foresaw a government subsidy, and it required contributions to be made by employers alone.

Finally, after much maneuvering and with the support of the Catholic Party of the Center, Bismarck had the bill accepted, and it became the law on July 6, 1884.

The Industrial Accident Insurance applied in the beginning only to very limited groups, only to workers employed in manufacturing and mining and to 'works officials' of these industries earning not more than 2000 marks a year. This restriction was made on purpose because it was felt that experience should be gathered before the act be extended to cover other groups. In the following three years, however, from 1885 to 1887, amendments were passed in order to include workers engaged in transportation, construction, agriculture and forestry, seamen, members of the armed forces, and federal employees. At the same time sickness insurance was extended to these groups insofar as they were not covered in some other way.

Accident insurance provided death benefits, disability and medical benefits. In case of fatal accident, benefits included compensation for

funeral costs and pensions to dependents. Disability and medical benefits were granted from the fourteenth week on and included complete medical care until restoration and part of the wages, usually two thirds, but in certain cases the full wages were paid.

Employers were required to organize mutual trade associations (*Berufsgenossenschaften*), one for every industry involved.¹² The associations were self-governing bodies that administered the insurance act, each one for its own industry. The workers had no part in the administration but were represented in the arbitration courts. During the first year benefits were paid by the government through the post offices. Thereafter contributions large enough to reimburse the government and to build up a reserve fund were collected from the employers.

This was a novel method of administering insurance. It was Bismarck's own favorite idea that he would have liked to see applied in all fields of social insurance. He succeeded in the case of accident insurance because it was new and began without precedents, while sickness insurance had to reckon with the vested interests of the many already existing funds. Bismarck was a strong advocate of the corporative state. He would have liked to see society organized in trade associations, the representatives of which would have constituted the parliament.¹³ But he did not live in the Middle Ages, and the time for fascism had not yet come.

§

The next step in social security legislation was to be the introduction of old-age and invalidity insurance. It had been announced in the Emperor's message as early as 1881, and the intention was to have it follow immediately after the enactment of accident insurance. But there was little enthusiasm. The Social Democrats, who at that time were still under the ban of the Socialists Act of 1878, were opposed to this as to the other insurances, and so were the Liberals. In this case the Conservatives were apprehensive also. They thought that old-age and invalidity insurance would benefit the industrial workers of the western provinces more than their own agricultural laborers of the eastern provinces. The *Reichstag*, besides, was busy with amendments to the previous acts. Thus several years passed before action was taken.

¹² There were sixty-seven such associations in 1926

¹³ See, e.g., *Gedanken und Erinnerungen*, Neue Ausgabe, Stuttgart and Berlin, 1922, vol. 1, p. 18.

Bismarck was getting on in age and was anxious to see his work completed. In September, 1887, he took a rather unusual step and published the draft of a bill before it had even been submitted to the *Bundesrat*, in order to arouse public opinion.¹⁴ He had already abandoned his original plan of having the insurance vested in a federal fund and of having it financed entirely by the state. He now wished to have it administered by trade associations and to have the costs contributed by employers, employees, and the state in equal parts. When the bill came before the *Bundesrat* in April, 1888, it was amended considerably, and when it reached the *Reichstag* in November, 1888, it foresaw the establishment of regional insurance funds¹⁵ controlled and guaranteed by the government. The premiums were to be paid by employers and employees in equal parts, and the state was to contribute a subsidy to the pensions paid out and the costs of administration. The insurance covered all manual workers irrespective of income and other employees earning not more than 2000 marks a year. It provided, after a waiting period, pensions to individuals disabled by sickness and to all insured persons upon reaching seventy years of age.¹⁶ The bill thus filled a gap left open in the other insurance system.

After long and heated debates, the bill was passed on May 24, 1889, with a small majority, 185 votes to 165. It became the law on June 22, 1889.

§

The old Emperor William I died in March, 1888, and was succeeded by Frederick III, who died a few months later. His son William II ascended the throne. He was young and ambitious, and less than two years later Bismarck was forced to resign.

His work was completed. He had unified the German states, had given the empire a strong position on the European continent. Industry and commerce were developing rapidly, and Bismarck himself, by origin a feudal landowner, had gradually become an exponent of the new order. Before he retired he had the satisfaction of seeing his social security legislation carried through.

¹⁴ "Grundzüge zu einer gesetzlichen Regelung der Alters- und Invalidenversicherung der Arbeiter," in *Annalen des Deutschen Reiches*, 1888, p. 21 ff.

¹⁵ There were twenty-nine such funds in 1926, the region usually coincided with one state.

¹⁶ The age limit was lowered to 65 in 1916.

Social insurance brought great benefits to all groups of the population. It guaranteed medical care to the increasing army of wage earners, not as a matter of charity but as a right that they acquired through their labor. It guaranteed them compensation for the loss of wages due to illness or accident, and pensions when they lost their earning capacity as a result of illness, accident, or old age. It gave security to their families to whom the benefits were extended in increasing measure.

The employers and society at large were benefited by having a healthier working class and by being relieved of an endless number of indigents under a system that distributed the costs evenly and under which everyone contributed according to his ability.

Bismarck's social legislation was a pioneering venture that required much imagination and courage at a time when there was little experience in mass insurance. It had to be carried through in the course of eight years against much parliamentary opposition and had to bow before the vested interests of existing organizations. As a result of the many compromises, the German social insurance system lacked unity and became an extremely involved and complicated mechanism, a defect from which it has suffered to the present day.

In 1889 the Old-Age and Invalidity Insurance Act was passed with a very small majority. Ten years later, in 1899, a very important amendment to the act came before the *Reichstag* and was carried with the votes of the Social Democrats almost unanimously with only three dissenting votes.¹⁷ In other words, social insurance by that time was no longer a controversial issue but was accepted by all political parties. Hardly a year passed without amendments, the general purpose of which was to extend the coverage to ever-larger groups, to increase benefits, and to lessen the risks by developing preventive measures. In 1911 a special insurance was established for salaried employees providing invalidity and old-age pensions and also pensions to survivors. It was no longer a workers' insurance, but one for the middle class. And finally the insurance system was completed when compulsory unemployment insurance was adopted in 1927. Whether Germany was a monarchy, a republic, or a totalitarian state, social insurance continued to be extended until it covered the great majority of the population.

Bismarck failed in one point. He did not succeed in destroying the Social Democratic Party and other socialist organizations of the country,

¹⁷ Robert Einhauser, "Die Novelle zum Invalidenversicherungsgesetz," *Zeitschrift für Sozialwissenschaft* (Berlin) 2 520, 1899.

as he had hoped. He came to realize that a strong and justified popular movement cannot be suppressed either by police regulations or by social insurance laws, for the simple reason that social insurance does not solve the basic problems of labor. It mitigates the hardships of the capitalist system, and at the same time prolongs its existence.

In spite of the great handicap of the Socialists Act, which was not discarded before October, 1890, the Social Democrats increased their vote continually. They had 9 seats in the *Reichstag* in 1878, 12 in 1881, 24 in 1884. In the elections of 1887 they increased their total number of votes but lost a number of districts and consequently 13 seats, but in 1890 they came back with 35 seats. They won 44 in 1893, 56 in 1898, 82 in 1903, and in 1912 they had become the largest and best-organized political party of the country with 110 deputies in the *Reichstag*.

Thus Bismarck's social legislation did not destroy the socialist movement, but it had far-reaching political consequences nevertheless in that it greatly contributed toward killing the revolutionary policy of the Social Democratic Party. Bismarck died in 1898, too early to see the full results of his policy, the development of the revisionist movement within German social democracy.

What happened was exactly what the labor leaders of 1882 who opposed Bismarck had feared. The benefits of social security legislation became an immediate gain to the working class, a gain that it was anxious to increase and very much afraid to lose, a gain which socialist parties in other countries were struggling to attain. German social democracy grew so rapidly and gained so much that it became a group with vested interests, "revised" its policy, and was ready to cooperate with the capitalist state, losing sight of its real goal. Bismarck's intention was thus ultimately fulfilled.

Under the events of the first World War the revolutionary left wing split off, but when the monarchy was overthrown in 1918 and the Social Democrats found themselves by far the largest party of the country they thought that the battle had been won, and that it would be possible to establish socialism gradually in a parliamentary way. But then the crash of 1929 and the bitter events of 1933 destroyed their political gains of half a century and reminded them that a symptomatic therapy may alleviate pains, but that it does not remove the causes of the disease.

§

One last question must be raised in this connection. What was the atti-

tude of the German medical profession toward social insurance and particularly toward sickness insurance?

In order to find out what the physicians thought of the legislation that was so hotly debated in the *Reichstag*, we looked up the leading medical journals of the period and also consulted dozens of autobiographies of contemporary physicians¹⁸

It was rather surprising to find that with very few exceptions neither the journals nor the biographies mention sickness insurance¹⁹ Rudolf Virchow, who had been the leader in the medical reform movement of 1848, wrote 128 papers and notes from 1881 to 1883. They were all on subjects of physical anthropology, and he did not devote one line to the problem of social insurance²⁰ The medical profession was not consulted when the bills were in the making and apparently did not care to be consulted

This indifferent attitude seems strange when we remember how vociferous physicians became in England, France, and wherever the question of sickness insurance came up, and yet there are very good reasons for it. One is that the idea of compulsory sickness insurance was nothing new to the German physicians. They had been the first to suggest it in 1848, and, although there was no universal insurance before 1883, yet there already existed a great many local sickness funds, membership in which was obligatory for certain groups of wage earners. The principle, therefore, was accepted by the profession long before 1883, and there was no reason for it to become excited over the new legislation.

Another and a very important factor was that in the 1880's, i. e., before the second industrial revolution, the relative number of wage earners was much smaller than in the twentieth century. The doctors served the middle class primarily and made a living from that group. Whatever practice they had with noninsured workers was indigent practice that was not or very poorly remunerated. Hence the extension of insurance to all wage earners could only serve the economic interests of the profession.

That this was actually the case is evidenced by the fact that, once insurance was established, the number of physicians increased much more rapidly in Germany than in other countries that had no compul

¹⁸ I am greatly indebted to Dr. Erwin H. Ackerknecht for the help he gave me in this search.

¹⁹ The *Ärztliches Vereinsblatt*, the organ of the German Medical Association, printed an abstract of the Sickness Insurance Act in its October number of 1883.

²⁰ J. Schwalbe, *Virchow Bibliographie*, Berlin, 1901.

sory sickness insurance. There was more money available to doctors, and therefore more young people entered the profession. The figures are very striking:

In Germany²¹ from 1889 to 1898 the population increased from 46,857,704 to 52,279,901, or by 11.5 per cent, while the number of physicians increased from 15,824 to 24,725, or by 56.2 per cent.

In Great Britain²² from 1891 to 1901 the population increased from 29,002,525 to 32,527,843, or by 12.8 per cent, while the number of physicians increased from 23,925 to 27,884, or by 16.0 per cent.

In the United States²³ from 1890 to 1900 the population increased from 62,947,714 to 75,994,575, or by 20.7 per cent, while the number of physicians increased from 104,805 to 132,002, or by 25.9 per cent.

From 1884 on, medical societies became more articulate. One of the weaknesses of the insurance act was that it did not regulate the relationship between funds and physicians. It was left to the discretion of the individual funds to contract with doctors in any way they pleased. They could appoint doctors on salaries or could remunerate them on a capitation or a fee-for-service basis. Some funds were small, had little money available, and were inclined to contract with the cheapest doctors they could find. Many physicians, on the other hand, were only too ready to underbid each other. Conflicts were unavoidable and lasted until the insurance physicians organized in 1900 a national association, the so-called *Hartmannbund*.²⁴ It permitted them to negotiate with the funds collectively, established standard contracts by which funds and physicians had to abide, and created a number of welfare institutions for its members.

²¹ M. Pistor, *Deutsches Gesundheitswesen*, Berlin, 1890, *Das Deutsche Reich in gesundheitlicher und demographischer Beziehung*, Berlin, 1907.

²² *Census of England and Wales, 1911, General Report with Appendices*, London, 1917.

²³ U. S. Bureau of the Census, *Special Reports, Occupations at the Twelfth Census*, Washington, 1901.

²⁴ *Verein der Aerzte Deutschlands zur Wahrung ihrer wirtschaftlichen Interessen*, named after its founder, Dr. Hermann Hartmann. It became the economic division of the German Medical Association (*Deutscher Aerztevereinsbund*).

TWENTY-FIVE YEARS OF HEALTH WORK IN THE SOVIET UNION



THE splendid record of the Soviet medical corps during the war has made a profound impression throughout the world. The Russians, however, very justly point out that this record would have been impossible if they had not succeeded in creating a powerful health organization in peace time. The war against disease is a permanent one that knows no armistice. In the short period of twenty five years, in the teeth of tremendous handicaps, the Soviet Union was able to develop its health services on a nationwide scale and under broad participation of the population. When the Nazis invaded the country, the shift from peace to war medicine was easier in the USSR than in other countries because there all medical services are always organized.

Philosophically Henry Sigerist was a humanist, politically he was a socialist. His interest in the Soviet Union was parallel to his enthusiasm for the United States. He traveled to Russia in 1935, 1936, and 1938 and wrote two full length books on Soviet medicine. In the Soviet medical system he saw the pattern of all health service for the future. He spoke and wrote on it dozens of times, and this paper is typical of many which traced the background of Russian medicine and described the achievements after the revolution. This paper was published as an editorial in the *American Review of Soviet Medicine* 1: 67-78, October 1943 (Dr. Sigerist was the first editor of this journal). It was reprinted under the title "The Organization of Soviet Medicine" in *Soviet Culture in Wartime* no. 2, pp. 24-29, 1944, under the title "Public Health in the Soviet Union" in *New Worlds in Medicine*, edited by Harold Ward, New York, Robert M. McBride and Co., pp. 669-684, 1946, and under the title "The Organization of Soviet Medicine" in *Understanding the Russians: A Study of Soviet Life and Culture*, New York, Barnes & Noble, pp. 113-122, 1947.

BEGINNINGS

On July 11, 1943, the Soviet Union celebrated the twenty-fifth anniversary of the foundation of its first People's Commissariat of Public Health. At the time of the October Revolution emergency conditions prevailed, but the Military-Revolutionary Committee in Petrograd already had its medical division. In February, 1918, a Medical Council was established, and then, on July 11, upon Lenin's personal initiative the People's Commissariat of Public Health was founded with N. A. Semashko as its first commissar.

This was an event of world significance because it created a totally new type of administrative health agency, one which to the present day has not been paralleled in any other country. After the first World War, a number of countries established ministries of public health, but their functions are very limited and cannot compare with those of the Soviet Commissariat of Public Health as we shall see in a moment.

The first years from 1918 to 1922 were extremely difficult. The country was completely disorganized, was torn by civil war, blockade, foreign intervention, famine, and epidemics. The commissariat had to concentrate its efforts on providing medical services to the Red Army and on fighting epidemics, particularly typhus. The louse was a much more formidable enemy than White Guards and foreign troops combined. Soap was rare, and drugs were neither manufactured nor could they be imported. It required superhuman efforts and the mobilization of the entire population to overcome these initial difficulties. But in 1922 the battle was won, and the work of reconstruction along socialist lines began.

RECONSTRUCTION

The Soviet Union was founded on December 30, 1922, as a federation of Soviet socialist republics. The constitution ratified in 1923 established People's Commissariats of Public Health in every constituent republic. Decentralization seemed advisable considering the vastness of the territory and the uneven development of the various regions. The central government, however, had the power to establish health policies and the health commissar of the Russian Federation of Soviet Socialist Republics was chief sanitary inspector of the Union.

Once the major epidemics were overcome, the chief task was to pro-

vide medical facilities and services to the working population in town and country. This was relatively easy in the cities, where existing facilities could be used and new ones could be erected without too much difficulty. Where new industries were created, medical centers were established at the same time and both grew and developed together.

The difficulties were infinitely greater in rural districts. Russia had since 1864 a system of public medical services in rural districts, commonly known as *Zemstvo* medicine, but facilities were far too inadequate, particularly among the national minorities, where they were almost non-existent. Some definite progress already had been achieved in the 1920's, but rural medicine could not be developed fully before the collectivization of agriculture that took place during the period of the first five year plan.

The fact that all over the vast territory of the Soviet Union women had been liberated from age-old bonds and were taking an increasingly important part in the economic and cultural life of the country called for special institutions, for maternity homes and nurseries.

In tsarist days, the number of physicians and medical institutions had been shockingly inadequate. And now there was a crying need for more doctors, nurses, hospital beds, sanatoria, dispensaries, for more of everything. This was at a time when all other fields of Soviet activity were also demanding more personnel and equipment. The new industries needed tens of thousands of engineers. The overcoming of illiteracy called for legions of school teachers. The thirteen medical schools of tsarist days, all located in the European section of the country, could obviously not satisfy the demand. New medical schools had to be founded over the entire Union and particularly among the national minorities, where instruction would be given in the native languages. New schools, however, required new scientific teaching personnel that had to be trained first.

We can easily realize what a superhuman task the Commissariats of Health were facing. It was so big also because the Soviets were always thinking in terms of the whole country. They always refused to develop one section at the expense of another and, on the contrary, concentrated their efforts on the backward regions.

In spite of all difficulties, in 1928, only seven years after the Civil War, the number of physicians had been increased from 19,785 in 1913 to 63,162, the number of general hospital beds from 142,310 to 217,711, of maternity beds from 6824 to 27,358, of rural health stations from 4367 to 7531, of women's and children's consultation bureaus from 9 to 2151.

In 1913 free nursery facilities were available for 550 children, while in 1928 the country possessed permanent nursery facilities for 62,054 and seasonal ones for close to 200,000 children.¹

In other words, at that time already, in 1928, the groundwork was laid. A universal system of medical services, free and available to all, had been created, and the task now was to develop it in quantity and quality. This was done systematically through the five year plans.

THE FIVE YEAR PLANS

During the first five year plan, fulfilled in four years, from 1929 to 1932, all medical facilities were increased. The health budget jumped from 660.8 million rubles in 1928 to 2540 million in 1933. But industry came first, particularly the heavy industries. They had first claim on manpower and materials. It would have been impossible to increase the number of physicians substantially if women had not enrolled in the medical schools in increasingly large numbers. There was a time when close to 75 per cent of all medical students were women, and today women are playing a very distinguished part and are holding leading positions in every medical field.

During the years of the second five year plan, from 1933 to 1937, the Soviet people began to reap the fruits of their labors. The new plants produced large amounts of consumers' goods. Agriculture had been collectivized, and food was plentiful. While industries continued to be developed very rapidly and a formidable, highly mechanized Red Army was being built, more funds, more people, and more equipment were available for health work and for cultural purposes. When the war clouds were darkening on the horizon, the army budget had to be increased tremendously, but it is noteworthy that this never led to a curtailment of public health funds. The health budget grew from 2540 million rubles in 1933 to 9433 million in 1938 and was 11,960 million in 1941.

The development of health facilities during those years was stupendous. The number of hospital beds was almost doubled; the number of maternity beds trebled. Many lavishly equipped sanatoria were built in the health resorts of the country. New research institutions were founded, and the existing ones were enlarged considerably. The number

¹ The figures quoted in this article are from a recent publication of the Commissariat of Health of the U.S.S.R.: Miterev, G. A., *The Protection of the People's Health in 25 Years of Soviet Power*, Moscow, People's Commissariat of Health, Medgiz, 1942, 96 pp.

of physicians increased from 76,027 in 1932 to 112,405 in 1938. The progress was not only one in quantity but also in quality. Standards were raised throughout. Medical education was reorganized, producing not only more but better-trained physicians. The new hospitals, dispensaries, and rural health centers had much higher standards than in the past. The chief impression of the visitor in 1938 was that there was not only more of everything but everything there was greatly improved.

These developments continued unabated until the country was engulfed in the war, and since figures speak the most eloquent and at the same time the most objective language, the total growth of health facilities from 1913 to 1941 is best illustrated by the table on page 144.

THE PEOPLE'S COMMISSARIATS OF HEALTH

The constitution of the Soviet Union which was adopted in 1936 created a new health agency, the All-Union People's Commissariat of Public Health. It is the central federal health agency, and the All-Union Commissar of Health is a member of the cabinet, of the Council of People's Commissars.

The People's Commissariat of Public Health of the U.S.S.R. is the apex of the administrative pyramid. It establishes health policies, directs and coordinates the work of the health commissariats of the constituent republics, and attends to health problems that concern the Union as a whole. It is an institution that has no parallel in any other country. No ministry of health anywhere has such great responsibility or such vast power. The commissariat, indeed, is responsible for the health and well-being of 170 million people and controls all health activities, preventive, diagnostic, and curative. But, more than this, it also produces the personnel, equipment, and knowledge required for its work.

Like the health departments of other countries, the commissariat is in charge of sanitation and the control of epidemic diseases, and sanitary inspection is one of its important functions. Since all health services are public services, the commissariats—federal and state—are in charge of hospitals, dispensaries, rural health stations, nurseries, sanatoria, health resorts, pharmacies, etc., and of the services they render. The standardization of health institutions has greatly accelerated developments, and the setting of standards is one of the important functions of the all-Union commissariat.

The commissariats, furthermore, produce the medical personnel they

Growth of Medical Facilities in the U.S.S.R., 1913-1941

		Year			
Units		1913	1928	1932	1941
Hospital facilities (nonpsychiatric)	Beds	93,223	158,514	256,158	450,691
	Beds	49,087	59,230	116,075	153,129
	Total	142,310	217,744	372,233	603,823
Psychiatric facilities	Beds	36,240	50,016	39,945	66,265
Maternity hospitals	Beds	5,192	18,241	26,981	74,480
	Beds	1,632	9,097	16,673	60,325
	Total	6,824	27,338	43,657	134,803
Sanatoria and health resorts	Beds	2,000	36,100	63,300	102,000
Urban medical centers	Institutions	1,230	5,673	7,310	12,645
Rural medical centers	Institutions	4,567	7,531	9,883	11,591*
Tuberculous dispensaries and stations	Institutions	43	498	498	925
Veneral disease dispensaries and stations	Institutions	12	800	683	1,351
Women's and children's consultation centers	Institutions	9	1,383	2,126	3,103
	Institutions	—	768	1,162	1,765
	Total	9	2,151	3,288	4,863
Permanent nurseries	Capacity	550	53,748	257,659	460,911
	Capacity	—	8,306	312,519	280,568
	Total	550	62,054	600,178	711,479
Seasonal nurseries	Capacity	106	195	3,929.1	3,242.3
	(in thousands)				
Physicians	Total	19,785	63,162	76,027	112,405
Health budget	(In millions of rubles)	—	660.8	2,510.0†	9,433.0
					11,960.0

* On January 1, 1938.

† For 1933.

need. In other words, they are in charge of educational institutions. Requirements and curricula are uniform throughout the country. The U.S.S.R. has today 51 medical, 12 dental, and 9 pharmaceutical schools training at the moment 120,000 students. Medical students have a five year course which is supplemented by a period of three years spent in rural practice. All rural physicians have regular postgraduate courses of several months' duration every three years.

At the outbreak of the war, the medical course was accelerated, very much as it is with us, but in 1942 the accelerated program was abandoned because it was found that a competent physician cannot be trained in less than the normal time.

The Soviet Union has, furthermore, 985 schools for the training of so-called middle medical personnel, that is, feldshers (medical assistants), midwives, nurses, dental and pharmaceutical assistants.

The commissariat is also responsible for the equipment required for the health work of the nation. In other words, it controls the medical industries, the pharmaceutical industry, and the industries that produce instruments, apparatuses, appliances, and other medical commodities. This also was a very revolutionary step. Patent medicines and swindle drugs, which in every country cause the waste of millions of dollars, quite apart from the harm they often inflict, are inconceivable in the U.S.S.R.

Attached to the health commissariat of the U.S.S.R. are 26 All-Union Scientific Research Institutes devoted to the various fields of medicine. They are large, well-equipped and well-staffed research centers combining laboratory and clinical divisions. Foremost among them is the All-Union Institute of Experimental Medicine, commonly called VIEM in its abbreviated form, one of the world's great medical research centers. From these institutes the commissariat draws inspiration, advice, methods, and to them it refers its scientific problems. The heads of these institutes, together with other outstanding researchers, constitute the Scientific Council of the commissariat.

Other medical research institutes are attached to the commissariats of the constituent republics, to municipal health departments or similar agencies, and the medical schools obviously all take a very active part in the scientific life of the country. In 1941 the Soviet Union had 223 medical research institutes staffed with 19,550 scientists.

Thus the commissariats of health have great responsibilities and great power. The administration of health, however, is not carried out in a dictatorial way but, on the contrary, most democratically. Special com-

mittces of the Medical Workers' Union are in constant touch with the commissariats, and no decision concerning medical workers is taken without consultation. Every commissariat has a special bureau for the examination of complaints. Whoever thinks that he did not receive the services to which he is entitled or was not satisfied with the service is free to complain, and every case is investigated very carefully.

Every factory, every farm has its health committee that cooperates very closely with the health agencies. Soviet medicine was born with the slogan that the people's health is the concern of the people themselves. It was recognized from the very start that health cannot be forced upon the people, that it cannot be dispensed to the people, that they must want it, and that the best measures are in vain unless they are carried out under broadest participation of the population. The health commissariats are the leaders of the people in their struggle against disease.

The health program of every civilized nation consists of four major tasks: (1) the promotion of health, (2) the prevention of disease, (3) the treatment of the sick, and (4) the rehabilitation of the former patient. Let us discuss briefly how the Soviet Union is handling these problems.

PROMOTION OF HEALTH

All too often health is taken for granted, and the individual becomes aware of it only when it is lost. The promotion of health is one of the most important tasks of medicine. From the first day on, for twenty-five years, the Soviet Union has been carrying on a vigorous campaign of health education. Beginning with the nursery, through kindergarten and school, sound health habits are developed in the children. In youth organizations, in factory and farm, wherever people work, no opportunity is lost to teach health. Hundreds of thousands of men and women are members of health committees in their working places, take an active part in improving the health conditions of their immediate environment and in preparing the health plans of the nation. This is in itself a great educational measure. Mass feeding in factory kitchens provided an unusual opportunity for improving dietary habits. The radical change in the mode of living effected among backward national minorities had great hygienic consequences.

I have often wondered why health education has been much more successful in the Soviet Union than in other countries, and I think the answer is that in the U.S.S.R. health education always went hand in hand

with political education. The Soviet citizen, more than anybody else, is aware of his responsibilities toward the community. He knows that health and sickness are not a private matter of the individual, that by becoming sick he deprives society of his labor, and he feels that it is his duty to remain healthy and fit. This is why health education falls on fertile ground.

The development of physical culture on a mass scale was another measure to promote health. The movement has reached millions of people, students, factory and office workers, and farmers alike. Systematic training under medical supervision has greatly contributed to developing a healthy and sturdy generation of men and women "ready for labor and defense."

The energy spent in labor must be restored, and the provision of facilities for rest and recreation is therefore an extremely important public health function. Annual vacations of from two to six weeks, according to occupation, with full pay are good but not enough. Facilities must be created so that the worker can spend his vacation in a way that will give him maximum benefit. In the early days of the revolution abandoned palaces of the nobility were turned into rest homes. Since then an endless number of vacation camps, rest homes, and resorts have been built in the country, at the seaside, and in the mountains. A great tourist organization makes it easy for the people to plan and carry out vacation tours. As soon as the Civil War had ended, the famous Caucasian health resorts and spas were thrown open to the people, and they have been developed in an unprecedented way. We overhaul our cars every year and have learned that it pays to have minor repairs made before the machine breaks down. Why not do the same with the human organism? Every Soviet rest home has physicians and medical facilities attached to it so that minor ailments can be treated before serious illness develops. This is undoubtedly a sound program of human conservation.

PREVENTION OF DISEASE

The prevention of disease is in the foreground of all medical activities. It is fair to say that the traditional barrier between preventive and curative medicine has been broken down. There are, of course, physicians who are working as public health officers and surgeons who are primarily therapists, but a new attitude has been created in training and practice. Prevention is emphasized all along the line of medical activities, and

every clinical case is a reminder that prevention has broken down somewhere. The fact that preventive and curative services are controlled by the same agencies has, of course, greatly contributed to overcoming age-old barriers.

The prevention of infectious diseases is carried out through general epidemiological measures, through sanitation and immunization. The task was gigantic in a country of such magnitude, covering vast territories of the Asiatic continent. Tsarist Russia was very backward in sanitation, and even Petrograd, the capital, did not possess an adequate water supply in all sections of the city. Smallpox vaccination was far from general in spite of the efforts of *Zemstvo* physicians. Thus, in many sections of the country, work had to start from scratch. If we wish to realize how much progress has been achieved in the short period of twenty-five years, we must compare conditions not with those of a small country like England but rather with those of the British Empire, including the Asiatic and African possessions.

Special preventive measures have been developed for the protection of those individuals who physiologically or socially are particularly threatened. Thus from the very beginning great attention was paid to the protection of motherhood, infancy, and childhood. Not only was every form of discrimination against married women abolished, but special protection was extended by law to pregnant and nursing women, who enjoy many privileges. The country today has 5803 Women's and Children's Consultation Bureaus where women can get advice for themselves and their children in all their physiological and pathological problems. This is a preventive measure of greatest significance.

The protection of labor, the creation of the best possible working conditions, is the responsibility of the trade unions, that is, of the workers themselves, a task in which they cooperate very closely with the health authorities. In the U.S.S.R. the All-Union Council of Trade Unions takes the place of our Department of Labor; in other words, labor is administered by the workers themselves. They collect and spend the vast social insurance funds amounting to about ten billion rubles a year. One of their tasks is the protection of workers against accidents and disease. Labor inspection is very strict and is carried out by sanitary inspectors and specially trained labor inspectors. They are aided in their task by workers' delegates, who in every plant and every shop are elected by their fellow workers. Every case of occupational disease must be reported and is investigated by specialists. The unions support over forty research in-

stitutes for the protection of labor, many of which have budgets of several million rubles and are equipped with laboratories and clinical divisions.

Periodic examinations of workers take place regularly, and their frequency is prescribed by law. In harmful industries, workers must be examined once every six months; in some, even once every four months.

Periodic examinations are undoubtedly a very important preventive measure, but it is even more important for a nation to have a system of medical care that encourages people to seek medical advice at the slightest symptom before serious illness has broken out. The Soviet Union has realized this by establishing a wide network of what we call medical centers, what they call ambulatoria or polyclinics. This leads us now to a discussion of the treatment of disease, although the distinction is purely artificial since medical centers serve preventive, diagnostic, and therapeutic purposes.

MEDICAL CARE THROUGH MEDICAL CENTERS

There can be no doubt that group medicine practiced through medical centers is superior to individual medicine. It is the form of medical care that makes the best possible use of the present advanced technology of medicine and is therefore best adapted to it. Group medicine is practiced in every country in the larger hospitals and makes their services superior to those the individual practitioner can render. The people need more than a family doctor today; they need the coordinated services of the general practitioner and of a wide range of specialists.

The Soviet Union from the very start adopted the plan of medical care through medical centers and developed it on a nationwide scale. Large factories or state farms have their own medical centers, staffed sometimes with more than a hundred doctors representing all specialties. Plants that are too small to justify a fully organized medical center share one with other small plants. Since industries usually develop in the same sections of a city, a large medical center can very well handle the workers of several small factories. In addition to the medical center all factories, whether large or small, obviously have first-aid stations staffed with nurses and a few doctors. Other medical centers serve residential districts. In the cities every district has its complete medical center. The organization is never rigid but is adapted to local needs.

All doctors are appointed on salaries, and the salary is determined by three factors: experience, responsibility, and hazard. They have four

weeks' vacation with full pay and frequent postgraduate courses. They see patients at the office and in the homes. In addition to the regular staff, the medical centers have consultants, usually professors of the medical school, who are called for special cases. Private practice has never been forbidden, but the better the public services became, the less demand there was for private physicians, so that the private practice of medicine has practically died out.

Some medical centers are directly connected with hospitals; others are not. A rural medical center will usually have its own general hospital and maternity beds, while in the city this may not be advisable. The center should be as easy of access as ever possible, therefore as close to the working place as possible. The factory grounds, however, are usually not the ideal location for a hospital. Patients are therefore hospitalized in institutions of the neighborhood. Large factories often have their own wards in definite hospitals and maternity homes of the city, just as they have their own rest homes and sanatoria.

Rural medical centers are obviously simpler. The medical station of a collective farm with a population of about 800-1000 may have one doctor, one dentist, a few nurses, a couple of midwives, and a dozen beds. This is ample for general medical care and minor surgery. Specialized services are provided by the district hospital, and all health institutions of such a rural district are under the constant supervision of the district health department. The health officer in charge is responsible for all health activities of his district.

By 1941 the Soviet Union had created 13,461 fully organized medical centers in cities and 13,512 medical stations in rural communities, giving free medical services to the people, using all means of medical science to protect and restore the people's health. This truly is a great achievement, the greater when we consider the difficulties that had to be overcome and the shortness of time.

From 1918 to 1941, the number of hospital beds was increased almost five times and standards of hospital construction were revised every year. In addition to general hospitals, the country is now well equipped with special hospitals for children, for the treatment of infectious diseases, chronic diseases, mental diseases, tuberculosis, etc. And treatments are continued in convalescent homes and sanatoria. No country has ever made such wide use of its natural curative forces, of mineral springs and climatic stations, and the results achieved in the treatment of chronic diseases have been very remarkable. The Soviet Union is today the lead-

ing country in the field of balneology and balneotherapy with a central research institute in Moscow and a number of other research institutions in various health resorts

REHABILITATION

Physical restoration is not the final goal of the physician's activities. No patient can be considered cured before he has been restored socially, and in this field the Soviet Union has done pioneer work also. This was to be expected since the rehabilitation of the patient serves the individual's welfare as well as that of society. Every effort is made to reintegrate the former patient into society and to prevent the skilled worker from dropping into the ranks of unskilled labor as the result of physical disability.

In every factory one can find highly handicapped workers: blind men, cripples, former tuberculous patients performing skilled labor, and many factories have special workshops for them where the conveyor belt moves more slowly. Most factories have diet kitchens, and the costs involved by such special provisions are met from social insurance funds. Disabled craftsmen join cooperatives where they can continue their work with government aid. And when a man's disability does not permit him to resume his former occupation, he is trained for the work for which he is best fitted at government expense.

In war time every country does a great deal of rehabilitation work, and the USSR probably more than any other country. The war veteran like any other citizen has a constitutional right to a job, and the government sees to it that he gets it without delay and that he gets good living quarters in addition. But in the Soviet Union rehabilitation is carried out in peace as in war. It is considered one, and not the least important, aspect of the general health program.

FROM PEACE TO WAR

Thus from 1919 to 1941, through the heroic years of the Civil War, the period of reconstruction, the years of Stalin's five year plans, the country stubbornly and planfully built up its health system, built it along new lines as a public service to which the people, all the people, are entitled. It created the social organization that the modern technology of medicine required if medical progress was not to be wasted. Much had been

achieved, but the job was by no means completed; it never is. Plans had been made that foresaw more of everything, more personnel and more equipment and still higher standards. The whole nation was busy building, building in every field, peacefully, and had only one wish: to be permitted to continue in the construction of a new world. And then suddenly, on June 22, 1941, the Nazi hordes invaded the country, and the Soviet people found themselves plunged into the turmoil of the war.

As I mentioned before, the transition from peace to war medicine was in many ways easier in the U.S.S.R. than in other countries on account of the organization and centralized direction of all medical activities. Overnight the entire health system was geared to war. Military medicine had always been a subject of instruction in medical schools, and all physicians, men and women, were prepared to take their place without delay in the armed forces, in war industries, or wherever their services were needed most urgently. Medical centers had always been an integral part of industrial plants. When industries had to be moved to other sections of the country the medical centers were moved with them, and where new industries developed medical facilities were created at the same time.

Medical research had always been carried on in a coordinated and planful way, and the Scientific Council could therefore without any delay concentrate on problems of war medicine and mobilize all research institutions of the country for the purpose. The government took a very wise step in appointing the chairman of the Scientific Council, N. N. Burdenko, surgeon-general of the Red Army.

Even so, the difficulties that had to be overcome were gigantic. The loss of territory deprived the country of essential resources, and the systematic destruction carried out by the Nazis exceeds all imagination. Aware of the significance of health and cultural institutions, the Nazis never evacuate a place without leveling it to the ground, destroying water supplies, sewers, medical centers, hospitals, research institutes, schools, and libraries.

And so the Soviet Union is facing a tremendous task of reconstruction. It is not postponed until after the war but is begun whenever conditions permit. Taking the long view, as they always did, the Soviet people are preparing for tomorrow planfully and scientifically. Once before they had to reconstruct their country; they will do it again and in a shorter time, because the pattern is set and the methods have been tested. The day is not far off when the last Nazi will be driven from Soviet soil and

the country will come back to life better equipped and more beautiful than ever before.

The Soviet Union was justified in celebrating the twenty-fifth anniversary of the foundation of its first People's Commissariat of Public Health. It has opened a new chapter in the history of medicine. The Soviet system of health services and the heroic Soviet medical corps have stood the test in peace and in war. And the medical workers of all civilized countries join in expressing to their Soviet colleagues their deep sympathy and admiration.



AMERICA

MEDICAL SOCIETIES, PAST AND PRESENT

I FEEL very much as though I were breaking into a family party to night. The doctors of Connecticut have assembled to celebrate the hundred and fiftieth anniversary of the founding of the New Haven County Medical Association. All the relatives from near and far come together to extend congratulations to the child whose birthday is being celebrated today—a very grown up child indeed. To do it honor are gathered here representatives of the administration, the church, the university, and many medical societies. Whenever a birthday party is held, it is customary for one of the worthiest members of the family to rise and express the feelings of all. And certainly no worthier member could have been selected than Dr. Harvey Cushing himself, a Yale graduate, now on the faculty of Yale, offspring of a distinguished line of physicians, pioneer doctors in New England, and later, in Ohio, one of the great figures in American medicine, who conquered a new field for surgery and always succeeded in preserving the humanistic spirit which is typical of all the really great doctors. I am sure that we all deeply regret that illness prevented Dr. Cushing from being with us,

In 1933 the County Medical Association of New Haven, Conn., one of the oldest in the United States, celebrated its hundred and fiftieth anniversary and invited Dr. Sigerist to give an address. In this paper he traces the history of organizations of physicians for professional, scientific, and social purposes, with particular attention to developments in the United States since the colonial period. The paper was published in the *Yale Journal of Biology and Medicine* 6:351-362, January 1934.

and I feel that I am speaking as a mere substitute, and that my task will not be easy.

When your invitation was extended to me, I felt greatly honored. I accepted it after some hesitation, and I did so for several reasons. Being an historian of medicine, I am naturally interested in all medicohistorical events, and being in charge of the first institute of the history of medicine to be established in this country, I am eager to increase my knowledge of American medicine. And I felt that, after all, we medical men, no matter what our origin, belong to one great family. Wherever we are, whatever our specialty, we are fighting the same enemy and serving the same ideal. And, finally, it occurred to me that coming from the outside, I might be able to tell you things that modesty would prevent you yourselves from saying.

In undertaking to prepare this address, I asked myself, "What is the meaning, what the significance of such a celebration?" Today we survey three thousand years of medicine and, from the point of view of the general history of medicine, the founding of a local medical society apparently is a small event that has taken place all over the world thousands of times. And yet the mere fact that we have assembled here makes it evident that this day has a special significance. We are naturally proud that, in spite of all difficulties, such an organization has survived for so long a time, and we are proud of the good work it has done. However, it seems to me that such a celebration has a deeper meaning. We are all busy professional men working hard to accomplish our daily tasks. Then suddenly such a day comes. It interrupts our daily routine, and makes us stop in the course of our everyday life. We look back into the past and reflect on what we have done so far, on what we are doing at the present time, and on what we are going to do in the future. So let us do that together. Let us look back and forward.

During this afternoon's exercises we heard the detailed story of the founding of this association. What had happened? A group of doctors had met because they had felt that some kind of organization was necessary "the more effectually to regulate the practice of physic." They felt that the medical profession required some kind of regulation, and this need has been felt at all times in the history of medicine.

The physician's profession gives him power. The physician knows poisons. Chemical, physical, and biological forces of high potency are placed freely in his hands. The physician enters all homes on the strength of his profession. Secrets are divulged to him which the patient

would hesitate to tell to his closest relatives, and this too gives him power over the patient. It is clear that the misuse of this power is a serious menace to society. Society tolerates the physician and honors him because it urgently needs his help. But at all times society has endeavored to protect itself from abuse of the physician's power by establishing regulations and standards of medical behavior. The physician, on the other hand, cannot work efficiently unless he feels that he has the full confidence of his patients. He, therefore, will welcome such regulations, will cooperate in establishing them, and in many cases will be the instigator of them.

There are two ways of proceeding, and both ways have been followed since ancient times. One way is for the state to pass laws regulating the physician's behavior, and this was done in ancient Babylonia, where the code of Hammurabi contains several paragraphs establishing a fee code and threatening the unsuccessful surgeon with heavy punishment. The other method is the one we find in ancient Greece, where the state did not interfere with medical matters but left it to the physicians to establish their own standards. The physicians, therefore, had to join and to create organizations. In the ancient times of Greece, medicine was a secret knowledge shared only by a small number of families believed to be descendants of Asklepios, each such family making up a guild and transmitting medical knowledge from father to son. In the time of Hippocrates, in the fifth century B.C., it became necessary to increase the number of doctors, and therefore a young man had to be admitted to the guilds from outside these families. The Hippocratic oath, which had to be sworn on such an occasion, gives evidence that, through being admitted to the guild, the young man took over all the duties and rights of the teacher's own son. He was formally adopted into the doctor's family, and in this way the character of medicine as a secret knowledge of the Asklepiads was preserved. The Hippocratic oath is a contract between master and pupil, between adoptive father and adoptive son, and at the same time, it is an oath, an obligation to the gods to lead a pure and dignified life, and to preserve high professional standards. The Hippocratic oath became the foundation of medical ethics, and very few medical documents have had such a deep and lasting influence down to our days. Whenever a medical organization establishes a code of ethics, one can be sure to find reminiscences of the Hippocratic oath.

The guilds of the Asklepiads were archaic institutions going far back in history and having deep religious roots. Another kind of medical

organization is met with in Rome. Medical conditions had undergone profound changes. The number of physicians had increased tremendously, and medicine was certainly no longer a sacred knowledge. And yet Æsculapius and Hygieia still were the patrons of the healing art, and physicians formed societies, *collegia*, to worship their patrons in common. These societies, however, served other social purposes as well, and from inscriptions we know that at least some such organizations made it a point to stimulate the zeal of their members, as, for instance, the medical society of Ephesus, which organized regular competitions and distributed prizes to those members who, during the year, had performed the most successful cure, the most brilliant operation, or had invented a particularly valuable surgical instrument. In antiquity, then, we find already two different types of medical organization, the one endeavoring to preserve high professional standards, the other of a more social character and trying to increase the scientific knowledge of its members.

In the early Middle Ages, most of the physicians were clerics; hence they were members of a very powerful organization. There was no need for special organizations; the church, to which the physicians belonged, giving them rules for conduct for their entire lives, professional or non-professional. The church, however, did not like the idea of its ministers occupying themselves with medicine, which after all was a worldly art. Surgery was considered particularly unsuitable for the priests, because any operation might be fatal, and the priests were not allowed to undertake anything that could lead to death. From 1131 on, edicts were passed restricting the clerics from medical work. The physicians, therefore, and particularly the surgeons, were more and more frequently laymen. As soon as this was the case, there was a need for a new type of organization, and this was provided for by the medical faculties. The old medieval faculty was a very powerful body. It not only transmitted a doctrine but felt bound to keep it pure. All the doctors belonged to the faculty, with the right of teaching. They were protected by their faculty but at the same time had strong obligations toward it.

In most European countries the surgeons stood outside the universities. They were craftsmen and were educated as such by serving as apprentices to a master. But like other medieval craftsmen they too had their organization, their guild. And it is well known in what a splendid way these medieval guilds took care of their members and at the same time strove for the maintenance of high professional standards. In some

places the physicians, too, were organized in guilds, as, for example, in Florence, where physicians and artists belonged to the same guild.

Through the foundation of human anatomy, the Renaissance was to influence the development of scientific medicine to a large extent. However, it was a long time before this influence was felt. Throughout the sixteenth century medical practice still followed the traditional lines. The university still had all the characteristics of a medieval institution, and it is only in the seventeenth century that we find a decisive turn in medicine.

To the historian, it is a fascinating period, this seventeenth century. And of course, important to us, as it is the time of the colonization of the North American continent. Whoever writes about American medicine in colonial times feels that he has to apologize that medical conditions were so poor. Granted that they were not brilliant, yet I am not sure that an apology is necessary. Were the conditions in Europe so much better? This is what we have to examine.

The seventeenth century was an epoch of striking contrasts. A devastating war in northern Europe, that paralyzed and nearly annihilated culture, and in France "Le Grand Siècle." The development of absolutistic government, and at the same time of the great democracies, Holland and England. The rationalism of Descartes, and at the same time wild religious fanaticism. The same contrasts are to be found in the picture of medicine during that period. A great scientific development took place, a wild outburst of the spirit of research. In the preceding century, anatomy had brought man from the lofty heights of speculation to the reality of the human organism. New methods opened a path to *the secrets of the body*. Through the microscope the structure of the organs could be examined, and through the application of quantitative methods and of physical and chemical concepts the function of the organs could be investigated as never before. Harvey succeeded in demonstrating that a problem which seemed insoluble could be elucidated by simple mechanical reasonings and experimenting. He did so in 1628, eight years after the Pilgrims landed in Plymouth. Others followed Harvey's lead—Borelli, Bellini, the chemists in the North, Boyle, Mayow, de le Boë (Sylvius), and so many others. A great enthusiasm for scientific research spread over all Europe.

And yet, in spite of this splendid development, medical practice was in the poorest possible condition. It is the time when Molière wrote his violent satires picturing a doctor who is a scholar in his way but entirely

unaware of the new times. And so in this field, too, we find these strange contrasts characteristic of the whole century. The principal reason for this peculiar situation lies in the utter fallacy of the universities, which clung stubbornly to their medieval traditions and completely failed in adapting themselves to the new trends. The doctors who came out of such universities could discuss texts but were unable to apply the new scientific methods. They were trained according to an educational ideal which belonged to a period that had gone. A new ideal had arisen of which the universities were unaware. And so the whole scientific development took place outside the universities. And as scientific research requires apparatus, collections, botanical gardens, etc., new institutions had to be created to meet the requirements. These were the academies, which, from 1600 on, were founded all over Europe, most important to us, the Royal Society in London, of which John Winthrop, Jr., was one of the first members.

Toward the middle of the century the peculiar situation had developed in Europe that the sciences, and among them medical science, were flourishing in the academies, while at the same time universities were training poorly qualified practitioners. This divergence was fatal, not only to medical practice but to medical science as well, because medical science and practice cannot be separated. They have to go hand in hand, practical observations providing material for scientific conclusions which in their turn guide the practitioner in his behavior. Whenever in history medical science and medical practice, the science and the art of medicine, developed along their individual lines the invariable result was inefficiency. This was the case in the seventeenth century, and this fact is expressed most tragically in the work of a great physician like Giorgio Baglivi, who as a scientist was a mechanist in the highest possible sense of the word, while as a practitioner he had to declare that all his science could not be applied, and that in therapeutics all he could do was to follow the rules of Hippocrates. The whole bankruptcy of the system became evident.

The inefficiency of medicine is further illustrated by the terrible epidemics that ravaged Europe throughout the century. The first bills of mortality of the city of London were published in 1662, and showed an appalling death rate. It is typical that only those branches of medicine flourished to a certain extent which were dissociated from the universities, namely, surgery and obstetrics.

A change had to come, and it is characteristic that it came from the

field of practical medicine. The man who brought it about was Thomas Sydenham. It has been pointed out that Sydenham had a rather poor academic training, that he was educated much more to be a soldier than a physician. This is correct, and this fact was probably one of his greatest advantages. He was an independent thinker, a great bedside doctor who, on the basis of his practical observations, built up a system of medicine which could be applied, and who unconsciously developed a new concept of diseases. In Thomas Sydenham, British common sense won a victory over sophisticated systems, and to the medical profession a new Hippocrates was given as an ideal.

I have traced a rather gloomy picture of the seventeenth century medical conditions in Europe. And yet I think it is hardly exaggerated. Under these circumstances, what could we expect medicine to be in the colonies? The medical problem to be solved was enormous. After a passage which in itself was an ordeal, small groups of immigrants suddenly found themselves transplanted into entirely different surroundings, into a climate the variability of which could not be surpassed. The majority of the immigrants who now had to live the life of pioneers were people who at home had led the peaceful life of an artisan or a shopkeeper. We can understand that in the beginning the mortality was terrific. A career in the colonies could not possibly appeal to an European doctor. Only a very few came, and still fewer stayed in the colonies; as a matter of fact only those who, besides being medical men, had the pioneer spirit and saw possibilities of development outside the medical field, as did John Pott in Virginia. And so the colonists had to help themselves as best they could. It is an inspiring thing to learn how the men who had more education than the average colonist applied their superior knowledge to serve their fellow men and to assist them in time of disease, men of the church, like Samuel Fuller, Thomas Thacher, and Cotton Mather, governors like your John Winthrop, Jr., lawyers like Thomas Pell, merchants like William Westerhouse. I doubt if any document gives a more vivid insight into the medical conditions of the early colonies than the letters written to Winthrop by his patients. It is further remarkable to see how soon European improvements were applied to the colonies, as was the case with the inoculation for smallpox.

It is extremely interesting to notice that American medicine in its early development went through all the stages through which European medicine had gone, the only difference being that it happened in a much more concentrated space of time. We had a period of clerical medicine,

just as the early Middle Ages had. Then the physician was a craftsman educated by serving several years of apprenticeship to a master, just as the Hippocratic doctor had done. The first European hospitals were institutions of a very different character from what they are today. They were not devoted to the treatment of patients—they were almshouses, guest houses, *xenodochia*, places where the poor and sick, who had no homes of their own, could find shelter. And the same happened in this country, where in 1612, already, in Henricopolis on the St. James River, such a house was erected long before the first real hospital, the Pennsylvania Hospital in Philadelphia, was built. The first incunable in European medicine was not a big book but was a single sheet printed in 1456 and containing instructions for bloodletting. And in the same way, the incunable of American medicine is not a book, but a single leaf, Thomas Thacher's "A Brief Rule To Guide The Common People of New England How to Order Themselves and Theirs in the Small Pocks or Measles." This parallelism is undoubtedly no mere coincidence but a proving of the rule that similar conditions bring about similar events.

There were no medical schools in this country, and only a very few people could afford to study abroad. But the education as a craftsman undoubtedly had great advantages. While in Paris and in most European universities medical education still was entirely theoretical, in America the young man was trained in daily contact with the patient and in this way acquired much more experience than his European colleague. A further point is that in Europe medicine and surgery were antagonistic subjects, the surgeons still being craftsmen, and in any case medical men of a lower order. In America, the physician being a craftsman also, there could not be sharp borderlines between medicine and surgery, just as there had not been any in Hippocratic times.

In the beginning, any medical help, wherever it came from, was welcome. As time went on and the conditions became more consolidated, one naturally became more critical, and by necessity the day came when one had to ask oneself "Who is a physician?" Anybody could call himself a doctor, but it is obvious that society had the greatest interest in a distinction between the man who had some real medical knowledge, empirical as it was, and the quack. And here again we can find that all devices were employed that had ever been tried in European medicine. Right here in Connecticut some physicians were licensed to practice by the General Assembly. They had to pay no taxes and were exempt from military and other duties; exactly the same had happened in imperial

Rome. There too the physicians were granted great privileges, and there too one had to decide who might be justified in calling himself a physician. Under Antoninus Pius a *numerus clausus* was established according to which only five, seven, or ten physicians, depending on the size of the community, were to receive the privileges. They were called the *valde docti*, and in order to be admitted to this group had to give proof of their knowledge.

Other regulations were passed in the colonies concerning medical affairs. Fee codes were established quite early in Virginia, and in 1760 a law in New York required that nobody should practice medicine or surgery or both without having been duly examined and licensed. But the physicians felt more and more that it was their own duty to keep the profession pure and to raise its standards. They knew that individually they could not accomplish anything, that they would have to join, and that only through united efforts would they be able to fulfill the highest ideals of their profession. And in this way, in 1735, a first medical society was founded in Boston. It seems that the second society in this country was established in New York. A third followed in Philadelphia in 1765, but two years previously an attempt to organize a medical society had been made in this state. This unfortunately failed, as we heard this afternoon. The movement, however, was started, and finally led to the foundation of the New Haven County Medical Association, which event we are celebrating today.

The foundation of this association and the decision to publish the transactions was the work of a small group of general practitioners. If I am correct, only one of them had been abroad and was a medical graduate. All the others had been educated in the customary way. Their merit is all the greater for that. I must confess that I have always felt a profound admiration for the inconspicuous and yet so extremely important work carried on by the general practitioner. Medical history so often is unjust in recording only the life and work of the great physicians, the men who wrote books, who were great teachers, or who enriched medicine with new outlooks and new methods. It is so much easier to trace their activities than to find out what the life and work of an anonymous country doctor was in a given place at a given time. And yet the people's health depends not only on the discoveries of the great professors but just as much on the unsung labors of multitudes of average physicians who fulfill the teachings of the leaders. I have always been very much attracted by this aspect of medical history. I had the

just as the early Middle Ages had. Then the physician was a craftsman educated by serving several years of apprenticeship to a master, just as the Hippocratic doctor had done. The first European hospitals were institutions of a very different character from what they are today. They were not devoted to the treatment of patients—they were almshouses, guest houses, *xenodochia*, places where the poor and sick, who had no homes of their own, could find shelter. And the same happened in this country, where in 1612, already, in Henricopolis on the St. James River, such a house was erected long before the first real hospital, the Pennsylvania Hospital in Philadelphia, was built. The first incunable in European medicine was not a big book but was a single sheet printed in 1456 and containing instructions for bloodletting. And in the same way, the incunable of American medicine is not a book, but a single leaf, Thomas Thacher's "A Brief Rule To Guide The Common People of New England How to Order Themselves and Theirs in the Small Pocks or Measles" This parallelism is undoubtedly no mere coincidence but a proving of the rule that similar conditions bring about similar events.

There were no medical schools in this country, and only a very few people could afford to study abroad. But the education as a craftsman undoubtedly had great advantages. While in Paris and in most European universities medical education still was entirely theoretical, in America the young man was trained in daily contact with the patient and in this way acquired much more experience than his European colleague. A further point is that in Europe medicine and surgery were antagonistic subjects, the surgeons still being craftsmen, and in any case medical men of a lower order. In America, the physician being a craftsman also, there could not be sharp borderlines between medicine and surgery, just as there had not been any in Hippocratic times.

In the beginning, any medical help, wherever it came from, was welcome. As time went on and the conditions became more consolidated, one naturally became more critical, and by necessity the day came when one had to ask oneself "Who is a physician?" Anybody could call himself a doctor, but it is obvious that society had the greatest interest in a distinction between the man who had some real medical knowledge, empirical as it was, and the quack. And here again we can find that all devices were employed that had ever been tried in European medicine. Right here in Connecticut some physicians were licensed to practice by the General Assembly. They had to pay no taxes and were exempt from military and other duties; exactly the same had happened in imperial

Rome There too the physicians were granted great privileges, and there too one had to decide who might be justified in calling himself a physician Under Antoninus Pius a *numerus clausus* was established according to which only five, seven, or ten physicians, depending on the size of the community, were to receive the privileges They were called the *valde docti*, and in order to be admitted to this group had to give proof of their knowledge

Other regulations were passed in the colonies concerning medical affairs Fee codes were established quite early in Virginia, and in 1760 a law in New York required that nobody should practice medicine or surgery or both without having been duly examined and licensed But the physicians felt more and more that it was their own duty to keep the profession pure and to raise its standards They knew that individually they could not accomplish anything, that they would have to join, and that only through united efforts would they be able to fulfill the highest ideals of their profession And in this way, in 1735, a first medical society was founded in Boston It seems that the second society in this country was established in New York A third followed in Philadelphia in 1765, but two years previously an attempt to organize a medical society had been made in this state This unfortunately failed, as we heard this afternoon The movement, however, was started, and finally led to the foundation of the New Haven County Medical Association, which event we are celebrating today

The foundation of this association and the decision to publish the transactions was the work of a small group of general practitioners If I am correct, only one of them had been abroad and was a medical graduate All the others had been educated in the customary way Their merit is all the greater for that I must confess that I have always felt a profound admiration for the inconspicuous and yet so extremely important work carried on by the general practitioner Medical history so often is unjust in recording only the life and work of the great physicians, the men who wrote books, who were great teachers or who enriched medicine with new outlooks and new methods It is so much easier to trace their activities than to find out what the life and work of an anonymous country doctor was in a given place at a given time And yet the people's health depends not only on the discoveries of the great professors but just as much on the unsung labors of multitudes of average physicians who fulfill the teachings of the leaders I have always been very much attracted by this aspect of medical history I had the

occasion to study in letters and diaries the work being done by such country doctors in the eighteenth century, in my own country, Switzerland. Thousands of letters written by these doctors have been preserved and give a very eloquent account of the manifold interests they had. In these letters we find these doctors struggling with their environment, fighting to catch up with the development of science, applying and experimenting with new methods as soon as they heard of them, and constantly exchanging their views with their colleagues in order to increase their knowledge. Toward the end of the eighteenth century, we find these anonymous doctors as pioneers in the great health movement that swept over Europe. We find them inoculating the farmers, educating the midwives, enlightening the people in all matters of health and disease, founding journals to serve that purpose. It struck me that there are many parallel situations to be found in this country. After all, practice in a mountain village wasn't so different from what it was in the colonies. And yet how much easier was practice in Europe, where drugs could be supplied and advice could be sought within a relatively small radius. The medical standards of a country are not to be judged only by the medical institutions but first of all by the average standard of the general practitioner. Quite a few countries in the world in this day can boast of some remarkable institutes and brilliant personalities, and yet their medical standard is deplorable. And so I have a great appreciation of the work done by the general practitioners as exemplified in the foundation of this association.

Down to the end of the eighteenth and during the beginning of the nineteenth century, the development of American medicine was absolutely sound. Under great adverse conditions the maximum was done that could ever be expected. Medical schools were founded, from 1765 on, the curriculum of which was more modern than in many European universities. America had the great advantage that it was not hampered by medieval traditions. In establishing new educational institutions, it could follow the inspiration given by the best faculties to be found in Europe, those of Leyden, Edinburgh, Göttingen, Vienna. The first hospitals erected in this country, the Pennsylvania Hospital (1752), New York Hospital (1776), Massachusetts General Hospital (1821), were greatly admired abroad. In Europe there are a good many hospitals that can trace their history back to the Middle Ages, but some of them have remained to our days in medieval conditions.

Had the development gone on in the same way, institutions would

soon have been attained that would have compared very favorably with those of Europe. We must not forget that in Germany scientific medicine developed relatively late. While in the beginning of the nineteenth century in France the physicians worked at the bedside of the patient and performed autopsies, German medicine went through a romantic philosophical period; the doctors speculated about disease and the world at large.

But then in America during the nineteenth century an enormous expansion took place, the conquest of a gigantic territory, the colonization of a continent. The nation grew, and it grew too fast. We know that, when an organism develops too rapidly, disturbances are bound to occur. The frontier became the determining factor in American life. History repeated itself over and over again. Medical help was needed, and it was welcomed wherever it came from and in whatever form it was manifested. Hundreds of medical schools were founded, many of them poorly equipped and giving a poor training. The doctors who wanted a higher medical education still had to go to Europe, and it was to Paris now, then Vienna, and finally Germany, where they went.

And yet this period exerts a strong fascination on the historian, particularly on account of its great personalities, doctors who themselves were pioneers, men like McDowell, who in a log cabin performed the first ovariectomy; Beaumont, who experimented in the wilderness; Daniel Drake, who explored the medical conditions of the Mississippi valley. Throughout that period, the medical societies played a very important part. They were the only organizations of physicians, the only bodies that had the authority to keep the profession pure. That an urgent need for a reorganization of medical conditions was felt is best illustrated by the foundation of the American Medical Association in 1847.

And then the frontier came to an end; the country was settled; one became aware that there were no laboratories, no research facilities, that many things were wrong with the doctors, the medical schools, and the hospitals, and that a readjustment had to take place. In the astoundingly short time of a few decades, new medical institutions were built up from the bottom, and to a European doctor nothing can be more impressive today than to study the medical equipment of this country, from New York to San Francisco, from the Great Lakes to New Orleans: the most modern hospitals, laboratories, medical schools, and doctors and nurses equipped by the most perfected means. That this development was effected so late gave America a chance to take advantage of European

experience; it had the wealth required for such an achievement, and, first of all, it had the optimism of youth. While American medicine for a long time sought inspiration abroad, it soon began to give the world back what it had once received, and today European students come in ever-increasing numbers to America to complete their education and American publications are read abroad with great attention.

And yet we—may I say “we” when looking into the future, as I consider it a great privilege to be allowed to collaborate with American doctors—must be aware that great problems are still to be solved. A splendid equipment has been created, and the question now is to apply it with the maximum benefit to the people. Great social problems, in which medicine is vitally interested, are still unsolved. It is not an exaggeration to say that a new frontier has been opened to the profession, and that new pioneers are wanted. We are still in the first period of the history of medicine, a period of therapeutic medicine. The second period, of preventive medicine, is hardly yet begun. Medicine has a great past but undoubtedly a still greater future. In the development to come, the general practitioner and his organizations, the medical societies, will have an important part to play. The societies are the forums where all these problems will have to be discussed. They represent the public opinion of the profession, and a great responsibility lies on their shoulders. It is quite obvious that, without the cooperation of the general practitioner, every effort will be in vain. And so it is to be hoped that these great new problems will be attacked in the same spirit in which, one hundred and fifty years ago, a group of practitioners came together here in New Haven to found an association “the more effectually to regulate the practice of physic.”

THE COST OF ILLNESS TO THE CITY OF NEW ORLEANS IN 1850

IN 1873 Max von Pettenkofer delivered two lectures on the value of health to a city that have become justly famous¹ He calculated what the cost of illness was to the city of Munich and how much money could be saved if health conditions were improved through modern sanitation. The population of Munich was 170,000 at that time and the general death rate 33 per thousand. In other words, 5610 people died in the city every year. Pettenkofer had good evidence for assuming that the ratio between the cases of sickness and the cases of death was 34 to 1 and that the average number of days of sickness was 20 per capita of the population, so that the total loss of time amounted to 3,400,000 days. Estimating

.....

The valuation of organized health programs in terms of money saved has become common practice, but the statistical techniques used are not clear to everyone. Dr Sigerist always sought to clarify current practices by explaining their historic origins, and in this paper he reviews the use of statistics to justify public health improvements a century ago in America. The paper was read before the Johns Hopkins Medical History Club on April 3, 1944, and was published in the *Bulletin of the History of Medicine* 13:493-507, May, 1944.

¹ *The Value of Health to a City*, two lectures delivered in 1873 by Max von Pettenkofer, translated from the German, with an introduction by Henry E. Sigerist, Baltimore, The Johns Hopkins Press, 1941. Also *Bulletin of the History of Medicine*, 10:473-503, October, 1941, 10:593-613, November, 1941.

very conservatively the average loss of money caused by the loss of wages and the cost of medical care at 1 florin a day, it became apparent that the population was losing every year 3,400,000 florins on account of illness, an impressive figure, even without the inclusion of capital losses due to premature deaths.

If the city built a new water supply and sewerage system it could, on the basis of the English experience, safely expect a reduction of the general death rate by 3 per 1000. This, however, would reduce the number of deaths by 510, the cases of sickness by 17,340, the sickness days by 346,800, and the population would save every year the same amount of florins. Capitalized at 5 per cent this sum represented 6,936,000 florins. In other words, if the city spent that amount on sanitation, it would invest a capital at a profitable rate of interest. And if it should be possible to reduce the death rate of Munich from 33 to 22, the then prevailing rate of London, the city would save 1,271,000 days of sickness and the same amount of florins, corresponding to a capital of 25,432,000 florins.

Pettenkofer was by no means the first to reason along such lines. In 1850 an American physician, J. C. Simonds, made a very similar calculation for his city, New Orleans, and his findings are very interesting.

Toward the middle of the nineteenth century health conditions were appallingly bad in New Orleans. The authorities for a long time refused to admit it. They were anxious to attract immigrants and liked to point out that the many deaths occurred in the Charity Hospital, that they were of poor immigrants who were unaccustomed to the climate, that they were "due to the want or imprudence of strangers and the unacclimated."² But outside of Louisiana, New Orleans "enjoyed the very undesirable reputation of being one of the most unhealthy localities in the United States."³ Malaria, yellow fever, cholera, typhoid fever, dysentery were killing a great many people. The water supply was "monopolized by a close corporation, dispensing it very sparingly and at most exorbitant rates" to the 10 per cent of the population who could afford the price. The others were dependent upon rain water collected in wooden cisterns,⁴ a supply that was usually exhausted in the hot summer months. The city was filthy and had no proper system of drainage.

² J. C. Simonds, "On the Sanitary Condition of New Orleans, as Illustrated by its Mortuary Statistics," *Southern Medical Reports* 2 207, 1851.

³ *Ibid.*, 205

⁴ J. C. Simonds, "Report on the Hygienic Characteristics of New Orleans," *Transactions of the American Medical Association* 3 269, 1850, where the rates charged for water are given

The authorities were interested in railroads but not in sanitation. From 1818 to 1855 repeated attempts were made to establish a board of health, but whatever organizations were founded usually collapsed after a few years and it was only in 1855 that a permanent board of health was created.⁵

At the middle of the century the physicians were at long last awakening to the seriousness of the situation. Dr. Edward Hall Barton was one of the first to admit that conditions were unsatisfactory.⁶ He was one of the most distinguished practitioners in town, had been dean of the Medical College of Louisiana from 1836 to 1840, and professor, first of *materia medica*, then of theory and practice of medicine, from 1835, the opening year of the school, to 1840. His major scientific interest was in meteorology, epidemiology, and statistics. He was a charter member of the American Medical Association and in 1848 was appointed a member of the Association's Committee on Public Hygiene.⁷ As such he presented a "Sanitary Report of New Orleans, La.," that was published in 1849 in the second volume of the *Transactions*. For many years he had been praising the healthfulness of New Orleans, but in this report he admits that sanitary conditions are bad and that until they are improved "a large mortality will inevitably ensue, together with such an occasional epidemic, with its devastating horrors, as will cast a lasting stigma on the salubrity of the place, and retard its permanent advancement to a prosperous and stable condition. When these improvements shall have been effected, I do not doubt its being made the healthiest large city in the Union and, withal, one of the *pleasante*st places of residence. And yet, hygienic observances have done little for New Orleans."⁸

Barton was much more outspoken in his criticism of conditions in another "Report upon the Meteorology, Vital Statistics and Hygiene of the State of Louisiana," which he read on March 7, 1851, before the Medical Society of the State of Louisiana, whose president he was.⁹ In this paper he attributed the insalubrity of the city to five major causes:

⁵ W. D. Postell, "The Medical Societies of Louisiana Prior to the War Between the States," *New Orleans Medical and Surgical Journal*, vol. 93, 1940

⁶ W. D. Postell, "Edward Hall Barton, Sanitarian," *Annals of Medical History* (ser. 3) 4:370-381, September, 1942

⁷ He served on the committee until 1849. At the Boston Convention of 1849 Dr. J. C. Simonds was elected to the Committee of Hygiene, *Transactions of the American Medical Association* 2:37, 1849

⁸ *Transactions of the American Medical Association* 2:603, 1849

⁹ *Southern Medical Reports* 2:107-153, 1851. Also published as a pamphlet, New Orleans, Davies, Son and Co., 1851.

very conservatively the average loss of money caused by the loss of wages and the cost of medical care at 1 florin a day, it became apparent that the population was losing every year 3,400,000 florins on account of illness, an impressive figure, even without the inclusion of capital losses due to premature deaths.

If the city built a new water supply and sewerage system it could, on the basis of the English experience, safely expect a reduction of the general death rate by 3 per 1000. This, however, would reduce the number of deaths by 510, the cases of sickness by 17,340, the sickness days by 346,800, and the population would save every year the same amount of florins. Capitalized at 5 per cent this sum represented 6,936,000 florins. In other words, if the city spent that amount on sanitation, it would invest a capital at a profitable rate of interest. And if it should be possible to reduce the death rate of Munich from 33 to 22, the then prevailing rate of London, the city would save 1,271,000 days of sickness and the same amount of florins, corresponding to a capital of 25,432,000 florins.

Pettenkofer was by no means the first to reason along such lines. In 1850 an American physician, J. C. Simonds, made a very similar calculation for his city, New Orleans, and his findings are very interesting.

Toward the middle of the nineteenth century health conditions were appallingly bad in New Orleans. The authorities for a long time refused to admit it. They were anxious to attract immigrants and liked to point out that the many deaths occurred in the Charity Hospital, that they were of poor immigrants who were unaccustomed to the climate, that they were "due to the want or imprudence of strangers and the unacclimated."² But outside of Louisiana, New Orleans "enjoyed the very undesirable reputation of being one of the most unhealthy localities in the United States."³ Malaria, yellow fever, cholera, typhoid fever, dysentery were killing a great many people. The water supply was "monopolized by a close corporation, dispensing it very sparingly and at most exorbitant rates" to the 10 per cent of the population who could afford the price. The others were dependent upon rain water collected in wooden cisterns,⁴ a supply that was usually exhausted in the hot summer months. The city was filthy and had no proper system of drainage.

² J. C. Simonds, "On the Sanitary Condition of New Orleans, as Illustrated by its Mortuary Statistics," *Southern Medical Reports* 2 207, 1851.

³ *Ibid.*, 205.

⁴ J. C. Simonds, "Report on the Hygienic Characteristics of New Orleans," *Transactions of the American Medical Association* 3:269, 1850, where the rates charged for water are given.

The authorities were interested in railroads but not in sanitation. From 1818 to 1855 repeated attempts were made to establish a board of health, but whatever organizations were founded usually collapsed after a few years and it was only in 1855 that a permanent board of health was created.⁵

At the middle of the century the physicians were at long last awakening to the seriousness of the situation. Dr. Edward Hall Barton was one of the first to admit that conditions were unsatisfactory.⁶ He was one of the most distinguished practitioners in town, had been dean of the Medical College of Louisiana from 1836 to 1840, and professor, first of *materia medica*, then of theory and practice of medicine, from 1835, the opening year of the school, to 1840. His major scientific interest was in meteorology, epidemiology, and statistics. He was a charter member of the American Medical Association and in 1848 was appointed a member of the Association's Committee on Public Hygiene.⁷ As such he presented a "Sanitary Report of New Orleans, La.," that was published in 1849 in the second volume of the *Transactions*. For many years he had been praising the healthfulness of New Orleans, but in this report he admits that sanitary conditions are bad and that until they are improved "a large mortality will inevitably ensue, together with such an occasional epidemic, with its devastating horrors, as will cast a lasting stigma on the salubrity of the place, and retard its permanent advancement to a prosperous and stable condition. When these improvements shall have been effected, I do not doubt its being made the healthiest large city in the Union and, withal, one of the *pleasantest* places of residence. And yet, hygienic observances have done little for New Orleans."⁸

Barton was much more outspoken in his criticism of conditions in another "Report upon the Meteorology, Vital Statistics and Hygiene of the State of Louisiana," which he read on March 7, 1851, before the Medical Society of the State of Louisiana, whose president he was.⁹ In this paper he attributed the insalubrity of the city to five major causes:

⁵ W D Postell, "The Medical Societies of Louisiana Prior to the War Between the States," *New Orleans Medical and Surgical Journal*, vol 93, 1940

⁶ W D Postell, "Edward Hall Barton, Sanitarian," *Annals of Medical History* (ser 3) 4 370-381, September, 1942

⁷ He served on the committee until 1849. At the Boston Convention of 1849 Dr J C. Simonds was elected to the Committee of Hygiene, *Transactions of the American Medical Association* 2 37, 1849

⁸ *Transactions of the American Medical Association* 2 603, 1849

⁹ *Southern Medical Reports* 2 107-153, 1851. Also published as a pamphlet, New Orleans, Davies, Son and Co., 1851.

(1) bad air; (2)-privies, cemeteries, various manufactories, stables, slaughterhouses, etc.; (3) bad water, stagnant water; (4) bad habits; (5) bad milk.

By far the most striking and most forceful indictment of the existing conditions came, however, at that time from the pen of Dr. J. C. Simonds.

Joseph C. Simonds is not listed in the biographical dictionaries, but like Barton he was a distinguished member of the New Orleans medical profession who took a very active part in public affairs. He was an early member of the American Medical Association and was delegated to the Boston Convention of 1849 by the Physico-Medical Society of New Orleans¹⁰ whose corresponding secretary he became in 1850. In 1849 he was elected a member of the committee that was to draft a constitution for the state medical society, and in 1851 he became chairman of the Committee on Therapeutics, Materia Medica, and Pharmacy of the state society. He also was one of the twenty seven charter members of the New Orleans Academy of Sciences founded in 1853,¹¹ and was a member of the Sanitary Commission of New Orleans appointed by the City Council in 1854.¹²

Simonds tells us what experience moved him to investigate the health conditions of his city.¹³

Two years ago I attended a meeting of the American Medical Association, which was held in Boston. I there found that the subject of sanitary reform was exciting considerable attention, and that this was based, as it always must be, upon statistical investigations into the actual and comparative number of the births, marriages and deaths, in different localities. In my intercourse with various persons there and elsewhere I found that New Orleans enjoyed the very undesirable reputation of being one of the most unhealthy localities in the United States. I knew that here we thought our city very healthy. My colleague on that occasion who had long been a resident of this city, did not hesitate to avow his opinion of its general salubrity. In reply to an attempt to prove its unhealthiness by a reference to the very violent epidemic of 1847, he said, that *only* about 3 000 died of yellow fever during that year, and I heard the remark afterwards quoted as a most astounding difference of opinion regarding the value of human life. I then proposed to myself to undertake the investigation of this question, with the determination to set it, if possible, finally at rest, and with the hope of being able to convince the world, by

¹⁰ The other delegate was Dr. James Jones, Barton's successor in the chair of theory and practice of medicine at the College. *Transactions of the American Medical Association* 2 29, 1849 where the Physico Medical Society is referred to as Chymico Medical Society.

¹¹ W. D. Postell, *The Medical Societies of Louisiana*, op cit.

¹² *Report of the Sanitary Commission of New Orleans on the Epidemic Yellow Fever of 1853*, New Orleans 1854. Simonds reported on quarantine, pp. 507-523.

¹³ Simonds, *On the Sanitary Condition of New Orleans*, op cit, p. 205.

an array of unquestionable statistical details and impregnable arguments that it had done injustice to New Orleans and that our city was not the Golgotha which it was everywhere represented to be. The subject had not been pursued long when I found that we were laboring under a delusion and that we had long deceived our selves regarding the salubrity of our city. This only urged me to more extensive researches and a more thorough examination of the subject that I might ascertain the causes of this great mortality and determine if it could be explained consistently with the theory of the salubrity of New Orleans.

As a member of the Committee of Hygiene of the American Medical Association Simonds had to present a report to the association in 1850. His investigation however was not yet completed and his Report on the Hygienic Characteristics of New Orleans published in the *Transactions of the American Medical Association*,¹⁴ was therefore very brief. A year later, however he was ready and the paper On the Sanitary Condition of New Orleans as Illustrated by its Mortuary Statistics which he read before the Physico Medical Society created a sensation. At the recommendation of the society it was read to the public in Lyceum Hall. In written form the paper developed into a small monograph. Dr E D Fenner published parts of it in his *Southern Medical Reports*,¹⁵ where upon Simonds revised the paper and published it in full in the *Charles ton Medical Journal and Review*.¹⁶

Dr Fenner wrote an introductory editorial note that gives an excellent characterization of the general tenor of the paper.

If anything can awaken the citizens of New Orleans to the importance of sanitary measures it will be such developments as are set forth in this extraordinary paper. Whilst it can but be extremely painful and humiliating thus to expose to public view the errors and defects of our municipal government it seems to be alike demanded by a due regard for the safety and happiness of the present inhabitants and the future progress of the city. Dr Simonds has performed an arduous and a thankless task—one that may bring him more obloquy than praise more denunciation than gratitude. For the present then he must rely for support upon the rectitude of his own intentions and the hope of ultimately doing good. He boldly assumes the responsibility of publishing to the world the startling facts set forth in this paper and it is but justice to say that however at variance they may appear to be with our preconceived notions or with public sentiment in this quarter they are placed upon a basis of recorded figures that entitles them to profound consideration. He appears to have fabricated nothing nor has he ventured to draw hypothetical deductions from imaginary premises all he attempts is to collect and display recorded facts to compare these with similar facts at other places to show the most rational

14 3 267 200 1850

15 2 204 246 1851

16 6 677 745 1851

conclusions to which they lead and to indicate their application to our own improvement and benefit. If any one questions either the facts or conclusions here presented let him show their fallacy rather than express doubts that may tend to destroy the confidence to which they may be justly entitled. The subject is one of vital importance to this community and worthy of serious consideration. Doubtless much may be done to improve the sanitary condition of this city but it is vain to expect that any important measures will be adopted until the people become convinced of their necessity and this can only be done by laying before them the facts and comparing our condition in respect to sickness and death with that of other cities. In view of this object the able author of this paper has labored with great energy and as he had determined to publish it somewhere we thought it much better for it to come out *at home*, than *abroad*. Dr S. is a man of a sound mathematical mind and peculiarly fitted for such a task as he has here undertaken. His language is bold and may grate rather harshly upon the sensibilities of some who occupy prominent positions but if anything will admit of strong language it is the discussion of matters involving not only the advancement of our city but the health and safety of ourselves and families. Official conduct may be even severely criticised without necessarily implying any personal unkindness.

The paper was a merciless indictment of the policy of *laissez faire* and concealment of the municipal authorities. In facts and figures, through analysis of whatever statistical data could be found, it demonstrated that New Orleans was one of the most insalubrious cities of the country. As to the remedy Simonds inspired by the British example, said ¹⁷

Perhaps the most effectual means that can be adopted in the present state of things would be the formation of a voluntary health association which would concentrate and unite the labors of those individuals whose philanthropy would induce them to engage in undertaking first to ascertain the truth with regard to our sanitary condition next to inform the community upon the subject and finally to urge those measures that might be deemed advisable. The movement in favor of sanitary reform in England was started in this way and voluntary associations have contributed most essentially to determine truly and to improve the sanitary condition of various places. The publications of the Health of Towns Association are constantly referred to as of peculiar value and are quoted even in official documents. Such an association here might publish cards to be distributed on board of every ship on its arrival warning immigrants and strangers of the dangers to which they are exposed pointing out the cautions to be observed and especially the necessity of prompt medical assistance. We now have a most worthy voluntary society in the Howard Association but its labors are confined to assistance rendered the sick during the existence of epidemics. Might it not be made a health association and become more active at all times in investigating and removing the causes of disease?

A sanitary commission should be appointed by authority of the Councils of New

Orleans and Lafayette to examine fully into the hygienic condition of the city including in its investigations the internal police of the hospitals asylums workhouses and all public institutions the condition of the poor and their dwellings the supply of water the various factories of gas chemicals etc the butcheries and dairies the supplies of milk and bread in fact a complete and thorough survey of every thing pertaining to the sanitary condition of the city The expenditure of \$5 000 or \$10 000 in such a survey would probably save to the city hundreds of thousands of dollars in the form of its most valuable property the lives of its citizens

We mentioned before that such a commission was actually appointed but not before a new epidemic of yellow fever had decimated the city in 1853 And when the commission had completed its work it had to sue the city council for payment of expenses

There are eloquent pages in Simonds report thus when he meets the argument that the high mortality, after all affects primarily the poorer classes Pointing out that these very classes constitute not only the bulk of the population of every city but its *most important and most valuable element*,¹⁸ he proceeds

Remove from this city to morrow all who are dependent upon their labor for their daily bread and how many would be left to enjoy this *salubrious* clime and what would be their condition? Remove all day laborers from your levees your streets and your warehouses and let your merchants commission merchants etc etc undertake the performance of those labors which are indispensably necessary and would not the mortality of this class be increased? Remove all menials and domestics send your *ladies* to the wash tub and let them trudge through the hot sun with a market basket and would they not speedily fall victims to the same causes that now cut off so many of the poorer classes? Remove from the city all who cannot afford to be buried at the high prices charged by the first class cemeteries and the number of our population would certainly fall far short of 100 000

It would be tempting to give a full analysis of the report but all I can do here is discuss briefly Simonds economic argumentation He realized as others had done and Pettenkofer was to do twenty years later that the best way to capture the people's attention was by referring to their pocketbook and he therefore attempted to calculate the loss of money that the people of New Orleans incurred every year as a result of illness

The task was difficult because the statistical foundations were very scanty Simonds based his calculation on a period of four years and four months for which he had figures available the years 1846 to 1849 plus the

¹⁸ The italics are in the text The passage is in *Charleston Medical Journal and Review* 6 722 1851

first four months of 1850. And he counted the population of Lafayette with that of New Orleans.

The difficulty in ascertaining the population was not caused by lack of a census but rather by the fact that there had been too many of them. New Orleans had a large transient population, and it made much difference how a census was conducted. A city census carried out in March, 1847, revealed a population of 94,526. A state census conducted in August of the same year gave the city a population of 79,503, while the U. S. census of 1850 gave 116,407 for New Orleans and 13,350 for Lafayette. Operating with these figures Simonds estimated that the mean population during the period was 106,885.

The total number of deaths that had occurred during the period was, according to internment records, 37,785, or an annual average of 8719. The death rate therefore would reach the terrifying figure of 81 per 1000. Assuming that the population figures of city and state census were too low and that the average population during the period was the same as had been found in the U. S. census of 1850, even then one would have a—high enough—death rate of 67 per thousand. It was 25 in London at that time.

The city lost during the period 37,785 human lives. What was the value of this loss in dollars? "Gangs of slaves," Simonds said, "are worth an average price of \$400, and it cannot be considered extravagant to estimate our entire population as worth the same." The capital loss therefore amounted to \$15,114,000.

To this was to be added the loss of interest on the capital, in other words, the value of the labor of the adults who had died. Simonds estimated that one half of the deaths were from the producing class of the community. Wages were high, ranging from \$12 to \$40 per month. An annual average of \$210, or \$900 for the entire period, was a low average. This resulted in a loss of interest of \$17,003,250.

Pettenkofer estimated the ratio between cases of sickness and cases of death as 34 to 1. Simonds more conservatively assumed a ratio of 20 to 1. Both were probably correct, since New Orleans had more deadly diseases. The number of cases of sickness was therefore 755,700 during the period.

As to the duration of illness Shattuck and others assumed an average of three weeks per case. Simonds counted with two weeks, presuming a greater prevalence of acute diseases. This gave a total of 10,579,800 days, of which one half occurred during the productive period of life. If

Sundays and holidays were deducted the balance was 4,347,750 days of labor lost. At 50 cents a day the value of labor lost by the community on account of illness was \$2,173,875.

The next items to be considered were the cost of death and the cost of sickness. Death brings expenses to every family, even in the case of a pauper. If \$15 was assumed as average cost, the total amounted to \$566,775. As to the cost of medical care, charity and private hospitals charged \$1 per day for slaves, and this could be considered a fair average, so that sickness during the period involved the expenditure of \$10,579,800.

The total bill was, therefore, the following:

Total Loss During Four and One Third Years

Capital sunk by death	\$15,114,000	
Value of labor lost	17,003,250	
		\$32,117,250
Value of labor lost by sickness		2,173,875
Losses		\$34,291,125
Cost of deaths	\$ 566,775	
Cost of sickness	10,579,800	
Expenditures		\$11,146,575
Total		\$45,437,700

The annual average loss to the people of New Orleans as a result of illness amounted, therefore, to \$10,485,623, or to slightly over \$100 per capita of the population.¹⁹ These were impressive figures. "Is it then surprising," Simonds concluded, "that New Orleans has not progressed more rapidly? What other city has had to encounter such losses, and what other city could stand them?"

But now the question arose: "Can these losses be prevented?—can this state of things be remedied? I answer fearlessly, yes," Simonds said without hesitation. But how? Through sanitary reform. What would the saving amount to or, in other words, what is the cost of preventable sickness?

Simonds correctly reasoned that the preventable deaths were primarily those caused by what we call infectious diseases, what he called zymotic

¹⁹ Simonds says that the per capita cost amounted to nearly \$105, which is too much if the mean population of the period is counted as having been 106,835.

diseases. They should be the first target of attack. He then compared the death rate of New Orleans with that of countries where sanitation was more advanced. England and Wales had a general death rate of 20 per thousand. Without venturing "to assume for New Orleans so favorable a rate of mortality," Simonds thought that 30 could be considered a normal mortality for his city. Therefore "all above this is to be considered a sacrifice of life that might be prevented by a rigid and proper application of well established principles of hygiene."²⁰

If with a population of 130,000 the death rate were 30 instead of being 62.2 as it was in 1850, 4000 human lives would be saved every year, 80,000 cases of illness and 1,120,000 days of sickness. How much money did that represent? Using the same mode of calculation as before, Simonds came to the following figures:

Cost of Preventable Sickness

Loss of capital sunk	\$ 1,600,000	
Loss of labor	400,000	
Loss by preventable death		\$ 2,000,000
Loss of labor by preventable sickness		850,000
Total loss by preventable disease		\$ 2,850,000
Expenditures by funerals, etc.	\$ 60,000	
Expenditures by sickness	1,120,000	
Expenditures for preventable diseases, etc.		\$ 1,180,000
Total cost from preventable diseases		\$ 3,530,000

The annual cost of preventable sickness was \$3,530,000, and Simonds might have added, reasoning as Pettenkofer did in 1873, that capitalized at 5 per cent this represented an amount of \$70,000,000. If the city spent that much on public health and achieved a reduction of the death rate to 30 it would have invested its money at a profitable rate of interest.

Today New Orleans is a flourishing city of 500,000 population and the general death rate was 13.5 in 1940. It is tempting to speculate what the cost of illness is to New Orleans today.

It has been estimated that the people of the United States lose every year \$10,000,000,000 as a result of illness,²¹ or about \$80 per capita. Hence illness would cost the people of New Orleans today every year

²⁰ *Charleston Medical Journal and Review* 6,729, 1851.

²¹ See I. S. Falk, *Security Against Sickness*, New York, 1936.

\$40,000,000, including capital losses, the loss of wages, and the cost of medical care. In other words, the tremendous improvement in health conditions reduced the cost of illness by 20 per cent, from \$100 to \$80 per capita. This is certainly much less than Simonds would have expected, but we must remember that the purchasing power of the dollar decreased considerably during the last hundred years and that the cost of medical care increased. By spending much money the people of New Orleans buy better health.

There can be no doubt, however, that the present cost of illness could be reduced considerably. There are still many cases of preventable sickness and of premature death in New Orleans. Sanitation was the first step that had to be taken. It has been taken, and the task today is to organize health and medical services in such a way that the whole modern technology of medicine can be made available to everybody irrespective of economic status, and that a broad program of health promotion, of prevention, treatment, and rehabilitation, may be carried out for the benefit of the entire population.

It seems to me that J. C. Simonds deserves more attention and credit for his courageous and far-sighted report than he has been given in the past.²²

²² I am much indebted to Dr. Erwin H. Ackerknecht for having drawn my attention to Simonds' report and to Miss Genevieve Miller for having helped me in gathering the literature.

THE REALITIES OF SOCIALIZED MEDICINE



THE National Health Conference that was held in Washington last summer was welcomed unanimously by all who have the nation's health at heart. It sounded like a bugle call, a signal for action. It meant that the period of surveys had come to an end and that, at long last, definite steps were to be taken to remedy an untenable situation. I may add that the National Health Conference made a profound impression abroad. I was traveling at the time through ten European countries, and wherever I went I found that the recommendations of the President's Inter-departmental Committee to Co-ordinate Health and Welfare Activities and the attitude of the conference toward them were discussed eagerly. In Europe, American medicine is regarded as being extremely advanced scientifically and technically but very backward socially. "If you are

.....

Under the New Deal of Franklin D. Roosevelt, certain public health measures were included in the Social Security Act of 1935. The first significant national proposals for improvement of general medical care, however, came in 1939 with the introduction of the first National Health Bill by Senator Robert Wagner. In this paper, which received widespread circulation, Dr. Sigerist gives his reasons for urging support of this legislation. The paper was published in *The Atlantic Monthly*, June, 1939, pp. 794-801. It was reprinted in *A Free Man's Forum: College Readings in Democracy*, edited by Edwin R. Clapp and Sidney W. Angleman, New York, Farrar and Rinehart, pp. 521-537, 1941; also in *Patterns and Perspectives: Essays for College Use*, edited by W. Earl Britton et al., New York, F. S. Crofts and Co., pp. 283-299, 1942. Reprints were issued as a pamphlet by the People's National Health Committee under the title *A Health Program for the American People: The Wagner Health Bill and the National Health Program*, 1940.

able to carry out this program," one of my public health friends said, "you will surpass European medicine definitely. You will set an example to the whole world and will reduce death rates in a way never dreamed of. Humbly we shall send our students to America to learn from you."

After ten years of extensive surveys by private and government agencies we know what medical conditions are in the United States. No country has ever had more data available on this subject, and our present health and medical situation is unmistakably clear. We now have documentary evidence for the fact that one third of the population has no medical service, or at least not enough. We know that 40 million people live on annual family incomes of \$800 or less, which just permits them an emergency standard of living and makes it impossible for them to purchase medical care; on the other hand, it is obvious that this is too large a group to be reached by charity services. We know that there is another third of the population whose family income does not exceed \$1500 a year. This group is perfectly willing and able to pay for part of the medical services it needs but finds it extremely difficult to budget the cost of illness. There are, furthermore, millions of families whose income is more than \$1500 a year, but to whom medical care presents a serious problem. They are not indigent and are not entitled to free services; they are willing to pay for what they get, but, again, find it difficult to budget the cost of illness. The group that is able to purchase whatever services it needs without economic hardship is infinitely small.

Such a situation is absurd, particularly when we remember that we have available almost all the personnel and technical equipment necessary to provide complete medical services of high quality, in prevention, diagnosis, and treatment. We have more doctors per capita of the population than any other country in the world. Our medical schools were backward for a very long time, but today we have seventy-seven recognized schools which train highly qualified practitioners and produce an enthusiastic medical corps that is eager to serve the public and expects nothing in return but the possibility of making a decent living. We do not need a larger number of physicians—at least not in the near future. We have splendid nurses, and if all of them were permanently employed there would be no immediate need to increase their number substantially. More public health nurses are wanted, but there are plenty of girls anxious to enter this profession and we have the facilities for training them. The hospital situation was a sore spot for a long time, but conditions have improved tremendously in the last twenty five years. As

a rule the cities are adequately supplied with hospital beds, but more hospitals are needed in rural districts. This, however, is an economic problem that can be solved without much difficulty.

We have excellent research institutions, and since the beginning of the century a generation of medical scientists has grown up that has made valuable contributions to medicine. European physicians who visited this country around 1900 had a superior smile on their lips when they watched our scientists. But conditions have changed. American leadership in medical science is universally recognized, and American publications are studied very carefully all over the world. Our philanthropic foundations are the envy of foreign countries, but let us not forget that medical research is financed to a much larger degree by public than by private agencies. The federal government supports some of the most important research institutions of the country. The Department of Agriculture alone is undoubtedly the largest research institute of the nation and probably one of the largest in the world. Great contributions have come from the National Institute of Health of the United States Public Health Service, and the National Cancer Institute will soon be the undisputed center in the field. Problems of infant and maternal welfare are investigated by the Department of Labor. The states and communities also contribute substantially to the support of research. Thirty-five of the seventy-seven medical schools are tax supported, and nobody will deny that many of them compare very favorably with some of the best privately endowed institutions. Seventy per cent of all hospital beds are in public hospitals. While private funds are shrinking steadily, more and more public funds will become available for research, and it seems to me most important that the government has recognized its obligation to support research.

In other words, we have a first-rate medical personnel and technical equipment, but at the same time large sections of the population have no, or not enough, medical care. We are told, however, that health conditions are better in this country than abroad, that in spite of unemployment they were better in 1938 than ever before in the history of the United States. This, we hear, proves that medical services are satisfactory, and that there is no reason in the world why we should bother about the present situation.

Yes, health conditions are, as a whole, better here than they are in France, Italy, Spain, Yugoslavia, or Greece. They are not much better than in England, Germany, Switzerland, or Holland. And they are cer-

tainly not better than in the Scandinavian countries or New Zealand. If health conditions are better here than in certain foreign countries, it is not because medical services are superior, but because this country was able to develop a higher standard of living. I have just studied conditions in Yugoslavia, where a public health man of genius, A. Štampar, has organized a splendid system of social medical services. If, in spite of these services, health conditions there are inferior to ours today, it is because the average wage of the industrial worker in Yugoslavia is forty cents a day, and the average size farm has about ten acres of land. Health conditions have greatly improved there, but health conditions are not determined by medicine alone. Nicotinic acid cures pellagra, but a beef steak prevents it. And if the United States was able to develop a higher standard of living, it was not because it had a system of its own. It produced food and commodities under the same system as European countries. The higher standard of living was caused by a unique combination of factors that made such a development possible.

§

If health conditions are better in this country, they are certainly not good enough. We still carry an enormous burden of illness, much of which could be prevented. We are far behind other countries in the incidence of venereal diseases. Over half a million people are infected every year with syphilis and over one million with gonorrhea. Annually 60,000 children are born with the handicap of congenital syphilis, and over 50,000 people die from the results of syphilis. There is no justification whatever for having such an enormous number of venereal patients among us. We have the scientific means to diagnose and cure the disease, and there is no reason why we should not eradicate it as Denmark and a number of other countries have done.

We have one of the lowest tuberculosis death rates in the world, but this low rate still means that we have about 400,000 tubercular patients undergoing treatment every year, and that the disease is the second cause of death for the age group between fifteen and forty-five years of age. We have a low maternal death rate, but in spite of it 12,500 American families are deprived every year of the wife and mother, and we know that at least half of these tragedies could be prevented. Our low infant death rate means that 69,000 children die during the first month of their life, and 75,000 infants are stillborn, in other words, in any given year 144,000 young women go through the trying period of preg-

nancy and childbirth, and the result is a dead child or one that will die in a few days or weeks.

Every year 600,000 people are disabled by pneumonia and almost 100,000 die of it, but we have a serum and a drug that could reduce the death rate by at least one half. We have 500,000 mental patients in institutions filling one half of all hospital beds available in the country, and about one million mentally deficient persons outside of institutions. An extension of mental hygiene services would keep many of these patients socially adjusted. One out of eight persons who reach the age of forty-five dies of cancer, and although the cancer problem is not yet solved we have methods of treatment that could reduce the death rate considerably.

Now that many acute diseases have been overcome, the chronic diseases are in the foreground and affect millions of people. Arthritis alone disables one and a half million persons every year, and even more individuals are suffering from neuralgia, neuritis, and lumbago. Diseases of the heart, the blood vessels, and the kidneys kill over half a million people every year, many of whom have been handicapped by their illness for a long period of time.

I think we cannot be ambitious enough in health matters. The fact that the United States has a higher standard of living and a superior technical equipment gives it possibilities of combatting disease that no other country has, and there is no reason why we should not set an example to the world and demonstrate that many diseases can be wiped out entirely and the incidence of many others reduced considerably.

Let us not be sentimental in these matters, nor speak in humanitarian terms. Let us forget that the American citizen has a right to life, liberty, and the pursuit of happiness, which by implication should include the means of preserving and restoring health; let us not think of all the mental misery and anxiety that illness creates for the individual and his family, but let us talk plain business. This country, with its good health conditions, loses every year 10 billion dollars as a result of illness. The population spends 3.7 billion dollars for medical care. Every wage earner loses annually eight calendar or seven working days on account of illness, and the loss of earnings amounts to about half a billion dollars a year. Considering the present status of medical science, about one third of all deaths are premature, and the capital value of these preventable deaths has been estimated to be over 6 billion dollars.

I am not a business man, but I know enough economics to realize that

10 billion dollars is a heavy tax, and one which is particularly unpleasant because it could very well be reduced considerably. And who carries this enormous burden? Business and industry, which lose the services of their employees and pay high taxes for public curative services, and also the employee who is sick at home without income and spends his last savings for medical care. Every child knows that prevention is not only better than cure but also cheaper. Would it not be better business to spend some money to prevent the incidence of illness rather than to spend many times that amount to cure it? If we agree on this principle, why, then, should we not act and organize medical services in such a way that the physicians may reach all the people, whether rich or poor, and that they may apply without restrictions whatever weapons medical science has forged for them?

§

The tendency to organize medical services represents by no means a new development. In the dark days of czarism, as early as 1864, Russia established a complete system of state medicine for the rural districts; since Russia is an agrarian country, this meant that the majority of the population received medical care from salaried district physicians and paid for their services through taxation. In Germany, it was under a conservative regime that Bismarck introduced a comprehensive system of social insurance, including health insurance, in 1883. He did it not under pressure, as we sometimes hear, but because, being a shrewd statesman, he recognized that a healthy working class benefits the employers as well. He found in addition that it was cheaper to make the workers pay for the services they received than to establish public or charity services. Germany's example was followed by one European country after another, by England in 1911, by France in 1928. When Alsace and Lorraine were returned to France, the two provinces had the German social insurance system and did not dream of giving it up, so the rest of the country followed suit and adopted it.

No country that ever enjoyed the benefits of social insurance has made the slightest move to relinquish them. On the contrary, there has been a tendency to extend social insurance to include ever larger parts of the population. In the eastern European countries which had to reconstruct their public health work after the war, medical services were organized very thoroughly. In Yugoslavia 3600 of 5000 physicians are in the service of either the government or the social insurance organizations. Pub-

lic services and health cooperatives bring medical care to the rural population, while the wage earners and salaried employees receive services from the social insurance organizations.

The average American does not know Europe and is convinced that there is nothing he can learn from foreign countries. There is, however, one group of European nations that he openly admires: the Scandinavian countries. He likes their democratic institutions, their high standard of living, and their high educational standard. In these countries, medicine is almost 100 per cent socialized. Public services and health insurance make the doctors available to everybody, and the health standard is remarkably high.

We often hear the naïve argument that if these European systems were superior to our haphazard distribution of medical care, health conditions in Europe would of necessity be better than in America. But, as I mentioned before, the standard of living is an essential factor of health. Most European countries have not enjoyed all the natural and economic advantages of America, and if they had not organized their medical services they would not have the relatively good health conditions they actually have today.

We need not look to Europe alone. In New Zealand the legislature in 1938 passed one of the most comprehensive social security acts that have ever been conceived. It aims to give every individual complete social security and provides an extensive system of pensions for all people who are handicapped economically by illness, invalidity, death of the breadwinner, and old age. It provides, further, all the means required for the protection and restoration of health. The system will in the beginning provide the free services of general practitioners, free hospital or sanatorium treatment, free mental hospital care, free medicines, and free maternity treatment. It will, as soon as feasible, be extended to include services of specialists. The plan will be financed from three sources: (1) a social security contribution of one shilling in the pound on the wages and other income of all persons; (2) continuance of the present registration fee of one pound per annum for males over twenty years of age; (3) subsidy from the Consolidated Fund. The price is not too high considering the many benefits that cover almost any risk. It has been estimated that the general practitioner will make an average income of \$6000 in our currency. He will receive additional compensation for midwifery, anesthesia, traveling expenses, and so forth. Consulting specialists will be remunerated according to a fee schedule.

On the South American continent one republic, Chile, has developed in the last fourteen years one of the most progressive systems of social legislation. Social insurance is compulsory for all persons under sixty five years of age whose annual income is less than 12 000 pesos and whose work is more physical than intellectual. This embraces the great majority of the population. Other persons whose annual income is less than 12,000 pesos can join the social insurance system voluntarily, provided they are Chilean citizens, less than forty five years of age, and have passed a previous health examination given by a physician of the insurance fund. The insurance system is financed through contributions of employer, employee, and state. In the case of employees working under a labor contract, the employer contributes 5 per cent of the wage bill, the employee 2 per cent, and the state $1\frac{1}{2}$ per cent. Insured persons who work independently and those who are insured voluntarily contribute $4\frac{1}{2}$ per cent or $5\frac{1}{2}$ per cent of their income according to the field in which they work, and the state contributes the same amount. The benefits consist of complete medical care, sickness, maternity, and disability benefits, and old age pensions. Patients are hospitalized in state hospitals and sanatoria the insurance fund paying the hospitals two pesos a day for each patient.

A still more progressive bill, to enforce preventive medicine, was passed in Chile in May, 1938. It requires periodic examination at least once a year, but more often if necessary, for all persons coming under the Social Insurance Act. The chief objective is the eradication of tuberculosis, syphilis, heart diseases and occupational diseases. The examination must include a Wassermann test and an X ray. In each case the complete clinical history and social history must be taken and a report must be made on the working conditions of the person examined. If in such an examination the doctors find that an individual is not sick but run down, they must, as a measure to prevent disease, prescribe for him either a complete vacation or a period of half time work, wherein the loss of wages is compensated for by the insurance fund. And no employee can be dismissed from his job in such a case.

§

These facts make it evident that the organization of medical services is not a new phenomenon, or limited to certain types of countries. It is a world wide development. In some countries the process is finished and

services are completely organized, others are halfway in the development, and in others it is just beginning; but no country can possibly escape the trend. Some people say, however, that this organization of medical services is nothing but the socialization of medicine, and the word "socialization" is a bogey—it smells of communism. We should not be afraid of the word, but should recognize that the socialization of services is the logical and unavoidable consequence of the industrialization of the world. If we are opposed to socialization we must also oppose industrialism and must advocate a return to the Middle Ages.

We must realize that the structure of society has undergone tremendous changes in the last one hundred years as a result of industrialization. A hundred years ago, one out of five gainfully employed persons was a wage earner, and four owned their own means of production, while today four out of five are wage earners or salaried employees and the number of independent producers has been reduced to a minimum. In a society in which four fifths of the whole gainfully employed population depend for an income on the labor market, there is of necessity a strong feeling of insecurity and as a result a pressing demand for security.

It is to satisfy this demand that social insurance systems are introduced everywhere in order to spread unpredictable risks among as many people as possible and to pool resources. The insecurity created by illness is merely one aspect of the general insecurity resulting from our general social economic system. In the period of transition in which we are living today, more and more aspects of our economic life will become socialized, and we have the choice only between two possibilities, either to socialize gradually or to let things go and wait until the pressure becomes so strong that it bursts forth in revolution.

When we look at the development of medicine in the last hundred years we find another explanation for the present situation. Not only has the cost of medical care increased considerably with the progress of medical science, but medicine, originally a private relationship between physician and patient, is tending to become a social institution. With the progress of medical science, the scope of medicine has broadened considerably. The law could not be administered without the expert advice of the psychiatrist. The sanitation of dwelling places, the protection of society against epidemics, the protection of mother and child, the care of tubercular and mental patients, the hospitalization of the indigent are tasks of such magnitude that they could not possibly be carried out in an unorganized, haphazard way. They require the power and scope of

the state, and therefore public health services have increased tremendously. In the United States we already have well-organized efficient state medicine in our public health services—federal, state, and municipal—and nobody will deny that they are largely responsible for improved health conditions.

The development of industry, on the other hand, has created so many new sources of danger that provisions had to be made to protect the worker not only in his own interest but also in the interest of the employer. Workmen's compensation acts are operating today in all but one state, and they guarantee the worker medical care and compensation for the loss of wages. These acts virtually amount to compulsory insurance against sickness caused by industrial accidents and occupational diseases. The principle has been generally accepted, even by the American Medical Association.

A great variety of voluntary insurance schemes have been applied with more or less success, and the tendency to spread the cost of medical care and to make the rich pay for the services given to the poor is expressed in charity services and in the sliding scale commonly applied by physicians. Thus we already have socialized medicine in the country, and I. S. Falk estimates that in normal years over 800 million dollars are spent for medical care through group payments under systems that are more or less socialized.

The problem we are facing today is, therefore, not to introduce some basically new principle but to develop already existing services. The population still spends three billion dollars in a haphazard way, with the result that many millions of people do not have enough medical care. If this same amount of money could be spent systematically it would carry us a long way, and comparatively few additional funds would be required to provide medical service for everybody and reduce the incidence of illness considerably.

The Technical Committee on Medical Care, which was appointed by the President, presented its report on February 14, 1938. The National Health Conference, consisting of representatives of all groups of the population, met in Washington on July 18-20, 1938, discussed the program, and endorsed it enthusiastically. On January 23, 1939, the President transmitted his annual message on health security to Congress, and on February 28, 1939, Senator Wagner introduced a bill (S. 1620) "to provide for the general welfare by enabling the several States to make more adequate provision for public health, prevention and control of

disease, maternal and child health services, construction and maintenance of needed hospitals and health centres, care of the sick, disability insurance, and training of personnel." The bill is an amendment to the Social Security Act. It aims to provide funds to put the National Health Program into practice and sets minimum standards.

We no longer need discuss the health situation in abstract terms. We have a precise program before us, and the question is whether we shall accept or reject it. The initiative is up to the states. The federal government does not try to impose a definite scheme upon them, but is ready to subsidize any state that develops a sound health program which meets with the minimum requirements established by federal legislation. The National Health Program aims to extend existing facilities and to develop principles that have already been accepted by the people.

What are its recommendations? Public health services have developed tremendously in the last few decades, and nobody can deny that they have proved their usefulness. They are primarily responsible for the reduction in the infant death rate, death rate of tuberculosis, incidence of venereal diseases, and similar achievements. An extension of such services will of necessity improve health conditions still further. This is merely a question of funds and personnel. The state health budgets average eleven cents per capita, which is not enough. The municipal budgets run from a few cents to one dollar per capita, but very few cities can boast of the latter figure. Less than one third of the counties and still fewer cities have a full-time professional health officer. With federal subsidies the states could develop their public services, and the results would be felt very soon. Such services in no way interfere with the private practitioner. Their task lies in a totally different field, and, as they address themselves primarily to the needy population, they relieve the practitioner of a burden he could not possibly carry.

The second recommendation provides the extension of hospital facilities, particularly in the rural districts. More than 40 per cent of all counties—a population of 17 million—have no registered general hospital. Many counties have hospitals, but they are small and are neither financially nor technically prepared to admit a larger number of free patients. Many needy patients, therefore, have to be hospitalized in the large cities, or they are not hospitalized at all, as happens very frequently. It has been estimated that the establishment of 360,000 new hospital beds would solve the problem, and the federal government is ready to give grants in aid to construct and improve needed hospitals and to provide

special temporary grants toward defraying the operating costs in the initial period. At the same time, outpatient clinics could be developed and diagnostic centers established, particularly in the rural areas where there is a definite lack of such facilities.

Another recommendation that seems to be generally accepted concerns the compensation for the loss of wages due to illness. Once we accept the principle of unemployment insurance, there is no reason why we should not extend it to unemployment resulting not from economic crises but from illness. The causes may be different, but the result is the same, and the hardship on the worker just as great. The fear that such a scheme would lead to malingering is not justified. Compensation would amount to only a percentage of the wages and would be granted after a waiting period of a few days. And even if it should induce a few unbalanced individuals to malingering, it would bring tremendous benefit to the whole working population.

Two other recommendations are controversial, and indeed they touch problems which are infinitely more difficult to solve. We know that one third of the population live on an emergency standard, and it is perfectly obvious that they cannot possibly purchase medical care in the open market. It is equally obvious that medical services provided for this group can be financed only through public funds. I think everyone agrees that such services should be complete, including physician, dentist, nurse, hospital, drugs, and appliances, and that they should be of high quality. In a democracy, the welfare of every individual counts and every life is valuable. If we are unable to overcome poverty, unable to provide a job for every man and woman willing to work, and to guarantee a decent standard of living to everybody, we are collectively responsible for such a condition, and the least we can do is to provide the means of protecting and restoring health to everyone who needs them.

The question is what form of services should be provided for this needy group, and this is best discussed in connection with the medical problem of the middle class. Many millions of otherwise self-supporting families—as a matter of fact, the overwhelming majority of the population—find it very difficult to budget the cost of illness, and many a budget has been wrecked by sudden illness, with very serious results. A plan that would permit families to finance the cost of treatment through periodic payments in proportion to their income would guarantee the regularity of medical services and necessarily improve health conditions. The federal government is willing to subsidize states that develop such a plan.

§

The possibilities of organizing medical care are limited. They are, to put it briefly, public services, health insurance, or a combination of both. Medical services can be made public services, financed through taxation and available to all without charge, like education or the administration of the law. This is, in my opinion, the ideal solution to which every country will come ultimately. This country, however, is not yet prepared to take such a far-reaching step. The next possibility, therefore, is health insurance, which can be voluntary or compulsory—compulsory for all or only for certain groups.

Many experiments have been made in recent years with voluntary insurance, and cooperative health associations, once the initial difficulties were overcome, have given satisfaction to all persons involved. Their great advantage is that they practice group medicine, which is a superior form of medical service, the only one that permits the application of all resources of medical science. They are a solution of the problem wherever there is a large, economically homogeneous group to be served. They do not represent a general solution, however, because they do not reach all the people who need protection. Still less do the voluntary insurance schemes initiated by medical societies in order to compete with group clinics and health associations. They are not health insurance but fee insurance plans, and perpetuate the present haphazard form of medical service.

If health insurance is to be effective it must be compulsory. Compulsory for whom? For all those who need help and protection—that is, first of all, the wage earners and salaried employees up to a certain income. Most European systems include only low-income brackets. We must do more. The Capper bill (S. 658), introduced in the Senate on January 16, 1939—a bill that sets minimum requirements for the approval of a state system of health insurance—provides compulsory insurance for all manual laborers and such employees whose wages do not exceed \$60 per week, which is a fair limit. For some reason unknown to me, it excludes farm laborers and domestic servants, who need protection just as badly. It does not exclude them entirely but permits them to join voluntarily, as may all such persons whose weekly income does not exceed \$100. Persons who are receiving old-age or unemployment benefits or relief could be included under such a system, whereby the premium would be paid by the agency distributing the benefits.

Under any insurance scheme the benefits must be available to the insured persons and their family members, and must include complete medical service with emphasis on prevention (immunizations and periodic physical examinations), maternity benefits, and cash benefits to compensate for the loss of wages. Funds should be used for health education and research.

The fairest way to finance such a scheme is to have all those groups contribute who benefit by improved health conditions—namely, the state, the employers, and the employees, whose contributions should be in proportion to their wages. The Capper bill foresees employees' contributions scaled from 1 to 3 per cent according to whether the weekly wages amount to \$20 or less, \$21 to \$40, or more than \$40.

The Capper bill has had very little publicity. It has some weak points, but as a whole is a very sound and constructive project that certainly deserves to be widely discussed. It is undoubtedly a great improvement on all European schemes and demonstrates that the overwhelming majority of the population, including the needy group, can be embraced by such a combination of compulsory and voluntary insurance.

Every system of distribution of medical care requires the cooperation of the physicians. The collection of premiums and the distribution of cash benefits are administrative matters, but the medical benefits are entirely in the hands of the doctors. So far the American Medical Association and its constituent societies have violently opposed the idea of compulsory health insurance. It is not easy to understand this opposition. The A. M. A. has accepted the principle of compulsory insurance for accidents and occupational diseases. In other words, it agrees that, if a worker suffers from lead poisoning as a result of his occupation, it is unobjectionable for him to be treated under an insurance plan by a doctor who may be a salaried physician and not the doctor of his own choice. The personal relationship between physician and patient will not suffer and the patient may be compensated for his loss of wages. If, however, his lead poisoning is due to adulterated food, the A. M. A. considers that the situation is entirely different and that insurance is undesirable. This discrimination is not very logical.

One very important reason for the physician's opposition must be that the doctor is ill informed in these questions. He is trained as a scientist and knows very little about economics and sociology. As long as the A. M. A. had purely medical problems to solve, it did a very good job, but now it is facing a problem that is also social and economic. The

§

The possibilities of organizing medical care are limited. They are, to put it briefly, public services, health insurance, or a combination of both. Medical services can be made public services, financed through taxation and available to all without charge, like education or the administration of the law. This is, in my opinion, the ideal solution to which every country will come ultimately. This country, however, is not yet prepared to take such a far-reaching step. The next possibility, therefore, is health insurance, which can be voluntary or compulsory—compulsory for all or only for certain groups.

Many experiments have been made in recent years with voluntary insurance, and cooperative health associations, once the initial difficulties were overcome, have given satisfaction to all persons involved. Their great advantage is that they practice group medicine, which is a superior form of medical service, the only one that permits the application of all resources of medical science. They are a solution of the problem wherever there is a large, economically homogeneous group to be served. They do not represent a general solution, however, because they do not reach all the people who need protection. Still less do the voluntary insurance schemes initiated by medical societies in order to compete with group clinics and health associations. They are not health insurance but fee insurance plans, and perpetuate the present haphazard form of medical service.

If health insurance is to be effective it must be compulsory. Compulsory for whom? For all those who need help and protection—that is, first of all, the wage earners and salaried employees up to a certain income. Most European systems include only low-income brackets. We must do more. The Capper bill (S. 658), introduced in the Senate on January 16, 1939—a bill that sets minimum requirements for the approval of a state system of health insurance—provides compulsory insurance for all manual laborers and such employees whose wages do not exceed \$60 per week, which is a fair limit. For some reason unknown to me, it excludes farm laborers and domestic servants, who need protection just as badly. It does not exclude them entirely but permits them to join voluntarily, as may all such persons whose weekly income does not exceed \$100. Persons who are receiving old-age or unemployment benefits or relief could be included under such a system, whereby the premium would be paid by the agency distributing the benefits.

Under any insurance scheme the benefits must be available to the insured persons and their family members, and must include complete medical service with emphasis on prevention (immunizations and periodic physical examinations), maternity benefits, and cash benefits to compensate for the loss of wages. Funds should be used for health education and research.

The fairest way to finance such a scheme is to have all those groups contribute who benefit by improved health conditions—namely, the state, the employers, and the employees, whose contributions should be in proportion to their wages. The Capper bill foresees employees' contributions scaled from 1 to 3 per cent according to whether the weekly wages amount to \$20 or less, \$21 to \$40, or more than \$40.

The Capper bill has had very little publicity. It has some weak points, but as a whole is a very sound and constructive project that certainly deserves to be widely discussed. It is undoubtedly a great improvement on all European schemes and demonstrates that the overwhelming majority of the population, including the needy group, can be embraced by such a combination of compulsory and voluntary insurance.

Every system of distribution of medical care requires the cooperation of the physicians. The collection of premiums and the distribution of cash benefits are administrative matters, but the medical benefits are entirely in the hands of the doctors. So far the American Medical Association and its constituent societies have violently opposed the idea of compulsory health insurance. It is not easy to understand this opposition. The A. M. A. has accepted the principle of compulsory insurance for accidents and occupational diseases. In other words, it agrees that, if a worker suffers from lead poisoning as a result of his occupation, it is unobjectionable for him to be treated under an insurance plan by a doctor who may be a salaried physician and not the doctor of his own choice. The personal relationship between physician and patient will not suffer, and the patient may be compensated for his loss of wages. If, however, his lead poisoning is due to adulterated food, the A. M. A. considers that the situation is entirely different and that insurance is undesirable. This discrimination is not very logical.

One very important reason for the physician's opposition must be that the doctor is ill informed in these questions. He is trained as a scientist and knows very little about economics and sociology. As long as the A. M. A. had purely medical problems to solve, it did a very good job, but now it is facing a problem that is also social and economic. The

Journal of the American Medical Association was biased in these matters from the very beginning, precluding any open discussion.

I have read dozens of articles and pamphlets written against health insurance in the last few years, and I found them full of mistakes and wrong statements. Men who are critical scientists in their own fields seem to lose every critical sense as soon as they approach a social problem.

There must be some reason for this vague fear of socialized medicine. Some doctors are afraid of mistakes and abuses that are apparent in European systems. There is no reason why we should copy these mistakes. On the contrary, we should be grateful to Europe for having done the experimental work so that we can learn from it.

Some fear political interference. Granted that this may be a menace, it is one that can be avoided. If the people have no confidence in the men whom they themselves elect to governmental positions, they can make the health insurance system an independent corporation managed by representatives of all the groups involved: employers, employees, physicians, and government.

Others are afraid of bureaucracy. Whether there is much bureaucracy or not in such a system depends entirely on the physicians. If they are willing to serve on salaries—which can be differentiated considerably according to experience and responsibility—there will be a minimum of red tape. It will be tremendous, however, if doctors insist on being remunerated on a fee-for-service basis which requires an extensive system of checking.

But the quality of medical care will suffer under any such scheme, we are told. Is it really so very high today? Is it adequate in rural districts, where many doctors practice the horse and buggy medicine they learned in a third grade medical school forty or fifty years ago? Quality will not be improved if insurance funds are used merely to pay the doctor's bill under the present haphazard system. It will be improved considerably, however, if funds are used to develop group medicine in health centers.

But then, we hear, the free choice of physician will be limited. The idea of unlimited free choice of physician is fine, but the fact does not exist and never has existed. The indigent patient who seeks help in a dispensary has no choice at all, but the A. M. A. has never objected to that. The patient in rural districts where only a few doctors are available has a very limited choice, and in cities the pocketbook sets definite limits to the free choice.

Some members of the medical profession are afraid of the economic

consequences that health insurance may have upon them. They do not know that in every country where it has been established health insurance has always brought more money to the doctors. They pride themselves that every day they are giving one million dollars' worth of medical service free of charge. That is, they pride themselves publicly. Privately, I have heard many a doctor bitterly complain that he could not collect his bills. The Committee on the Costs of Medical Care revealed that doctors with high incomes in the cities collected as much as 80 per cent of their bills, but those with low incomes in small towns collected only 20 per cent. This is not just. There is no reason why the physician should not be remunerated for honest work. Health insurance would ensure that he would be; it would relieve him of a great burden.

By systematically obstructing experimentation, the American Medical Association has greatly harmed the reputation of the medical profession. Its indictment by the District Court of the United States for the District of Columbia has deeply impressed the public. Lawyers will have to decide whether the Sherman Act can be applied to the practice of medicine, but whatever the outcome of the trial may be the fact will remain that medical organizations have applied methods of coercion that are condemned when business applies them. The public, however, should know that the rank and file of the medical profession do not blindly follow their leaders. They feel greatly disturbed and do not know what policy they should follow. The Medical Society of the County of New York recently held a poll asking its members whether they would favor compulsory health insurance or not. The result was significant: two thirds of the members had no opinion and abstained from voting; only 24 1/3 per cent were opposed and 9 per cent in favor of compulsory insurance. The rank and file will continue to perform their duty, and I have no doubt that they will cooperate joyfully the moment they are convinced that socialized medicine benefits the patient as well as the profession.

Health insurance is not a panacea. It is not the ideal system, but I think that, under the present social and economic conditions of the country, compulsory health insurance combined with an extension of public health services is the best possible solution.

Medicine has had a very short history, of but 5000 years, and it has become really efficient only in the last 100 years. For 5000 years people fell sick and, once they were sick, called for a doctor. It is time that we should change this relationship and devise a system under which the

doctor will call on the potential patient in the home, in the workshop, or on the farm. Such a program will not lead to regimentation but, on the contrary, to an application of the principle of family practice never before realized.

I am confident that our medical problem will be solved in a not distant future. I believe in the common sense of the people. I know that new problems call for new leaders, and that physicians of great reputation and integrity such as Dr. Hugh Cabot and Dr. John P. Peters find an ever-increasing audience. And, most of all, I have faith in the young medical generation that is growing up under our eyes.

GROUP HEALTH PLANS IN THE UNITED STATES

THE Farmers' Union Cooperative Hospital Association in Elk City, Okla., is the creation of a doctor of great vision and courage, Michael A. Shadid. His biography is very colorful. He was born in Syria, in a village of Mount Lebanon, a poor boy but intelligent and ambitious. He managed to go to school, came to Bayreuth where he attended courses at the university while working for a living. His dream was to be a doctor, a helper of the people.

He had a relative who was a merchant in New York and who on a visit to his homeland offered to take the boy to America. At the age of sixteen Shadid saw the Statue of Liberty. It meant a great deal to him

.....
In the summer of 1940, travel abroad was ruled out by the war, but Dr. Sigerist took the opportunity to travel throughout the United States making a study of new programs of medical care. This survey was supported by the *New York Newspaper PM*, which published his observations as a series of articles in September, October, and November. Eighteen programs were reported on. Here are reprinted the stories on two of these programs: The Farmer's Union Cooperative Hospital Association of Elk City, Okla., and the Ros-Loos Medical Group of Los Angeles, Calif.

These articles were published in the *Newspaper PM* between September 20 and October 8, 1940, under the following headlines: "Farm Health Plan in Oklahoma Is Commended by Dr. Sigerist," "Oklahoma Farmers' Health Plan Worth Copying, Dr. Sigerist Says," "Dr. Sigerist in Los Angeles Studies Ros-Loos Health Plan," "Ros-Loos Branch Clinic Plan Is Explained by Dr. Sigerist," and "Dr. Sigerist Finds Ros-Loos Health Plan Basically Sound."

who came from a country that was savagely oppressed by the Turks. He landed full of hope, believing fervently in all that America represented. But he was penniless, and for several years he made a living by peddling in cheap jewelry.

In doing it he came to know the country and its people better than many native Americans. And then the day came when he had saved enough money to make his old dream come true. He entered Washington University Medical School in St. Louis and became a doctor.

He practiced for many years in small towns of the Middle West and South, went through all vicissitudes of country practice, did well, and made a handsome income. He had married the girl to whom he had been betrothed, and she bore him two boys and four daughters. Another man would have been satisfied, would have joined service clubs, would have aspired to be president of the Community Chest and honorary pall bearer whenever a prominent man in town died.

Not so Shadid. He was too close to the people, too critical, and too honest. Elk City, where he practiced, is a city of 4000 inhabitants in western Oklahoma, center of a farming district. The average farm has 160 acres, but the land is dry and the farmer is poor, at the mercies of rainfall and fluctuations of the market.

Shadid saw that thousands of farmers' families did not get the medical services they needed. He also saw doctors exploiting the people in order to make a living. They were not crooks, not all of them. The system was wrong. "Sickness and death," he once wrote, "should be to nobody's advantage. No one should look at them as the hope of his livelihood. An injury to one should be felt an injury to all."

In the fall of 1929 he called a meeting and explained to the people that if 2000 families would contribute \$50 each they would be able to build and equip a hospital for themselves. And if they paid \$25 a year they would receive all medical and surgical services they needed without further charge. The farmers had their cooperative cotton gins. They understood the idea and the Community Health Association, as it was then called, was founded. It was the first cooperative health association in the country.

It would be too long to relate the history of the early years of the association, the enormous difficulties encountered, the mistakes made in a field where there was no experience, or the diabolic persecutions by the County Medical Society, which spared neither efforts nor money to strangle the young association. Dr. Shadid has told the story in a book.

A Doctor for the People, which is not only a great contribution to the history of medicine but a fascinating human document.

The association survived, developed, and is flourishing today.

The principles are easy to understand. Shadid has summarized them in four points: (1) group medical practice; (2) periodic payments; (3) consumer control; (4) preventive medicine.

A family becomes a member of the cooperative by contributing \$50 which is used for capital expenditures. The Community Hospital in Elk City was built from such contributions. It is the property of the cooperative and can be sold only by agreement of two thirds of the members. Membership is open to everybody who applies for it without political, racial, or religious discrimination.

The association counts today 1900 families including about 8500 individuals. Ninety-eight per cent of all members are farmers. They live in ten counties of western Oklahoma. Some are fifty or even one hundred miles from Elk City. In every county, members hold an annual meeting at which they discuss their problems and elect delegates, one for every twenty members. The delegates meet once a year in Elk City, transact the business of the association, and elect from among themselves a Board of Directors consisting of five members. The board appoints a business manager and a medical director, and they in turn appoint their staffs. Members are in full control of the association.

The \$50 contributed by members on joining the association does not finance medical services. It is used, as was said before, for capital expenditures. Medical services are financed through periodic payments of members. Annual dues are:

One person	\$12 00
Two persons	18 00
Three persons	22 00
Four or more	25 00

This applies to families consisting of father, mother, and all unmarried children living at home, regardless of their number or age. If such a family is less than four, then a dependent father, mother, or brother living with the family may take the place of the child.

The dues entitle the members to all examinations, treatment, and surgical operations by the medical staff, including all laboratory examinations, X-ray of teeth, and extractions without additional charge. Since the hospital made a good profit in 1939, benefits will be increased from

November 1, 1940, on to include the cleaning and filling of teeth without extra charge. Other dental services are at present charged as follows:

Synthetic filling	\$ 1.50
Gold work	5.00
Dental plates	25.00

Home calls are charged \$1 plus 25 cents per mile one way, but most work is done in the hospital. The members know that a thorough examination cannot be made in the home. They are proud of their hospital and use it very freely. They do not hesitate to drive a sick family member many miles to bring him to the hospital.

Community Hospital was built and equipped from membership dues. It was opened in 1931 with twenty beds. Since then it has been enlarged three times and is now an imposing building with eighty-five beds, excellent operating and delivery rooms, laboratories, and all facilities for the practice of scientific medicine. The ground floor contains the doctors' offices with examination and treatment rooms. The upper floor has semiprivate and private rooms. There are no wards. There is no luxury, but everything is spotlessly clean and convenient.

The members' annual dues pay for medical and dental services. To maintain the hospital the following charges are made:

Room, board, and general nursing care:	
Semiprivate room	\$ 2.00
Private room	3.00
Anesthesia and use of operating room:	
Major operation	\$20.00
Minor operation	10.00
Delivery	10.00
One X-ray picture	3 00
Additional pictures	2.00

Medicines and serums are charged extra.

At one of the annual meetings, Dr. Shadid suggested that members pay \$50 instead of \$25, which would include hospitalization and all other services. But members were opposed to the idea and voted unanimously to maintain the previous system. The farmer has little ready cash and while he is willing to pay \$25 for services he is sure to need during the year, he prefers to take a chance with hospitalization, particularly since charges are low.

One difficulty that the association encounters is that a member, after

having been operated on and feeling well again, may be inclined to discontinue the payment of dues. In order to discourage this the hospital from November 1, 1940, on will charge \$4 a day instead of \$2 to all members who pay dues for the first time or failed to pay dues the preceding year.

Hospital and staff are also available to nonmembers who are charged regular fees.

The hospital has at present a staff of thirty-five medical workers, including five physicians and surgeons and two dentists. Two additional physicians will join the staff next winter. Until recently, four fifths of all membership dues were used for the remuneration of physicians and dentists and one fifth was applied to hospital expenses. The money that thus came in was distributed according to a key. In the future, however, doctors will be paid regular salaries ranging from \$300 to \$800 a month. Every doctor has a vacation of one month a year on full salary.

The growing success of the association is the best evidence that the plan meets a real need and works to the satisfaction of the members. It brings scientific medicine practiced by an organized group of competent physicians to a group of people who are hard to reach—poor farmers scattered over a wide area. And it brings it at a price that the people can afford.

I have no doubt that these Oklahoma farmers receive more and better medical care than most farmers in the country. The service would be still more efficient if the hospital could maintain branch offices, health stations in distant points. But this could only be done with subsidies. The present group could not carry the burden.

Under such a system the doctor is no longer dependent upon the ill health of people. He is free and is paid for keeping people well. He has become the health officer and educator that Shadid visualized in the past.

The success of the association has demonstrated that consumers' co-operation can be applied to the protection of health. One hears sometimes that consumers' groups are inclined to underpay the doctor. This has happened in the past. To a poor farmer a salary of \$10,000 or even \$5000 must seem enormous. But just as union members have learned that a good leader is worth a good price, so members of group health associations have learned that a good doctor is worth a good salary. And it is good doctors they want.

Dr. Shadid has recently run for Congress. He was the people's choice.

He came out second of seven candidates, and vile tricks were used to defeat him. He will run again in two years on a health platform. If he wins we shall have a "doctor for the people" in Congress.

§

The Ross-Loos Medical Group in Los Angeles has made history and will always have a distinguished place in the annals of American medicine. It fought a heroic battle for its existence, won it, and is now by far the most successful group of its kind. It has set an example to the country that has been followed and will, I have no doubt, be followed still more in the future.

Dr. Donald E. Ross and Dr. H. Clifford Loos, both prominent doctors and respected members of their community, were approached by employees of the Department of Water and Power of Los Angeles in 1929 and consulted about the possibility of organizing a medical service for them financed through periodic payments.

Would it be possible to measure unpredictable economic risk of illness by paying monthly a small amount that would not unduly burden the family budget? The idea was sound not only economically but also medically, for it was obvious that patients would call more freely on the doctor if they knew that this would not involve unforeseen expenses. And it was equally obvious that service by an organized group of general practitioners and specialists in a well-equipped clinic would be superior to those rendered in individual practice.

The Ross-Loos Medical Group began operations on April 1, 1929. Patients were so satisfied with the services they received that other groups of employees, the police corps, fire brigade, school teachers, and industrial groups applied for admission. Additional physicians were appointed, and the group grew from year to year. The success of the idea was apparent. But now the Medical Society became alarmed.

Group practice was nothing new. The brothers Mayo had founded a private group clinic decades before, and there were many group clinics functioning very successfully in the country. But there was a difference.

All these clinics served individual patients on a fee-for-service basis. Ross-Loos were making a revolutionary departure in medical practice by accepting groups of employees and applying principles of insurance. Under their system the doctor no longer benefits by the ill health of the

people but by their good health. When subscribers were sick the group lost money, but it prospered when they were healthy. The plan was entirely voluntary. Nobody was urged to join, but once an employee had freely chosen the Ross-Loos Group as his family group he did not consult other physicians.

It seemed obvious that, if such a scheme should find imitators, the economics of medicine would be changed radically, and it would be difficult for the individual practitioner to compete with such organized groups.

On the charge of having solicited patients, Dr. Ross and Dr. Loos were expelled from the County Medical Society in 1934. It was the first and unfortunately not the last such case. It drew nationwide attention. The consumer felt threatened.

Here was a plan under which people received excellent medical care at a price they could afford. Could it be destroyed on formal grounds?

Doctors Ross and Loos appealed the verdict, and in 1936 were reinstated to full membership in the County Society and the American Medical Association. The battle was won, and the group developed more rapidly than ever.

Today, Dr. Ross heads the medical work of the group and Dr. Loos devotes most of his time to its administration.

Prevention cannot be achieved merely by giving the patient a complete medical examination once a year. In order to prevent serious illness, all minor ailments must be attended to without delay.

Dr. Loos thinks that periodic payment plans should not be limited to low income groups. The need is just as great in the higher brackets. A family with an income of \$6000 lives on a higher standard than a family of \$3000 income and has just as little money available for the emergency of illness.

Dr. Loos is also very much opposed to the sliding scale. Nobody is willing to pay \$10,000 for a Ford car so that others may buy it for \$100. Under his plan, risks are shared and resources pooled. There is no charity involved. The cost of medical care has been determined for the group. Everybody pays the price and is entitled to all the service he gets.

Most subscribers are accepted in groups, from civil service, the professions, commerce and industry, irrespective of income. There are about one hundred and twenty such groups today.

Today all subscribers accepted in groups pay \$2.50 a month. This entitles them to complete medical care, preventive, diagnostic, and cura-

tive, in office, home, and hospital, by general practitioners and specialists, including laboratory tests, X-ray, physiotherapy, drugs and dressings, hospitalization in a first-class hospital up to ninety days in any one year, and ambulance service.

Excluded is the treatment of a few diseases such as mental disorders, drug addiction, and attempted suicide, or injuries that fall under the Workmen's Compensation Act. A special charge is made for eyeglasses, hypodermic injections, blood for transfusion, radium treatment, and similar procedure, but the charge is much smaller than it ordinarily would be.

Recently Ross-Loos began to accept also individuals who are not members of groups. There was much demand for such an extension of service, but, since the risk is much greater, persons who join as individuals pay a higher rate, \$3 a month, and must pass an entrance examination for which \$2 is charged.

On July 1, 1940, Ross-Loos had 24,489 subscribers of which 1304 were not members of groups.

When the Ross-Loos Group began its work in 1929, there was no experience available from which to draw and a good deal of experimentation had to be done. In the beginning subscribers paid \$1.50 monthly, and this included medical care for the entire family. It was soon found, however, that \$18 a year could not possibly finance the medical services an average family required, and it was found, in addition, that dependents were abusing the services much more than subscribers.

The system was changed. Today dependents pay fees for the services they receive, but at a considerably reduced rate. An office call costs 50 cents, home calls \$1, minor operations not more than \$12.50, major operations, including calls made at the hospital, \$25; confinement cases, including prenatal and postnatal care, \$20. Under this system the average cost per dependent family amounted in 1929 to \$0.66 a month. In other words, \$3.16 a month (\$2.50 plus \$0.66) or \$37.92 a year pays for the cost of medical care for a subscriber and dependent family members. Counting the dependents, the Ross-Loos Group at present takes care of the health of about 75,000 people.

Dentistry is the sore spot in the health system of the nation. Much advanced technically, it is very backward socially. Dr. Loos thinks that there are not enough data available today to devise a periodic payment system for dental care. There is, moreover, a basic difference between the need for medical and that for dental care. An individual is in need

of medical attention from the moment of birth to the moment he dies. The need for dental care, however, stops whenever a man has his last tooth extracted and has acquired a nice set of artificial teeth.

Since dentistry is extremely important, particularly for the prevention of disease, Ross-Loos have an arrangement that makes dental care easily available to their subscribers. A group of dentists—general and specialists—practice independently within the premises of the clinic. They pay nothing but rent to the clinic, but have agreed to treat subscribers of the group according to a definite, very reasonable fee schedule. They must submit to the patient an estimate of cost for every treatment, and they have also agreed to have bills paid to them in monthly installments. Patients of the group can go to any dentist they like, but if they consult the dentists in the clinic they have definite benefits.

The group consists today of eighty-five full-time physicians, general practitioners, and specialists representing all fields of medicine and surgery. In special cases specialists from outside are called in consultation. Dr. Loos likes to appoint young doctors who may grow in the service. For general medicine, the requirement is that a candidate has graduated from a grade A medical school, that he has had at least two years of hospital experience as intern and resident, and that the time elapsed since his graduation does not exceed seven years. When Dr. Loos finds a particularly promising man, he appoints him even if there is no immediate need. He knows that the need will come soon enough.

Dr. Ross, Dr. Loos, and sixteen senior physicians own the clinic in partnership. The other doctors are appointed on salaries ranging from \$3800 to \$10,000. They receive a bonus in addition. Their income is net. They have no overhead and no financial worry of any kind. They can devote all their energy to the task. They have vacations every year and after a few years of service have special leaves of absence to attend post-graduate courses.

Every week the members of one department meet at Dr. Ross' residence for the discussion of scientific problems, and every month a general staff meeting is held. It was my privilege to attend such a meeting. It was held in a club and began with a dinner. Several papers were read and discussed. The standard was high, and the spirit could not have been better.

The total staff, including administrative and auxiliary medical personnel, amounts to two hundred and sixty persons.

The clinic is housed in a four story and basement building with a

central location (1355 Wilshire Ave.). It has all the equipment required for the practice of scientific medicine.

When the number of subscribers increased, a geographic problem arose. Los Angeles covers an enormous area, and it became difficult and time consuming for patients to call at the clinic and for doctors to make home visits. The solution was to establish branch clinics in the suburbs and adjacent cities. Ross-Loos today have twelve such branch clinics.

The group is growing and spreading constantly. Some time ago eighty employees of the telephone company in Pomona, a city forty miles from Los Angeles, expressed the desire to be served by the group. It was explained to them that it was impossible to establish a branch clinic for such a small group, that this would require a minimum of seven hundred and fifty subscribers. Anxious to have the benefits of the service, the telephone employees approached their friends working in other enterprises. The mayor became interested in the plan, and a few months later more than seven hundred and fifty employees applied for membership. Ross-Loos are now building a clinic in Pomona providing ample space for future development.

The group has no hospital of its own. It can use the facilities of any hospital of the city and respects the wishes of patients. For practical reasons, however, most subscribers are hospitalized in the Queen of the Angels Hospital, where the group has about 100 beds permanently occupied. Experience has shown that the cost of hospitalization per subscriber amounts to 22 cents a month, which is considerably less than a cent a day.

The Ross-Loos Medical Group of Los Angeles makes an excellent impression. The idea behind it is sound medically and economically. It represents modern scientific group medicine practiced in well-equipped medical centers. The whole system tends to develop preventive medicine first of all. If I were president of a life insurance company, I would not hesitate to grant the subscribers special rates. Under such a system the patient has not only a family doctor but a family medical center and has it at a price he can afford and can budget.

I am convinced that a policeman in Los Angeles has more and better care than many a millionaire. The success of the group proves that patients are satisfied with the services. If they felt that they were treated as numbers or that the personal relationship between them and their doctors had suffered they would back out very rapidly.

Under such a system the physician is "decommercialized." He no

longer has to sell his services on the open market. He is economically free and can do whatever the case requires without hearing the depressing question, 'How much, doctor?' and without red tape. His remuneration is adequate, and this is why the group never had any difficulties in obtaining the services of well trained, competent doctors.

Ross Loos is not a consumers' but a producers' cooperative. Through the group committees, however, there is a close cooperation between clinic and subscribers. Both groups have the same interest. I think one need not be afraid that the doctors under such a system will make undue profits. At the present rates this could only be achieved by cutting down the services, and the patients would feel and resent this very soon. The patients, on the other hand, do not want underpaid physicians. They know that a good doctor is worth his price.

Every physician has the duty to contribute to the advancement of medical science, and a group of eighty-five physicians serving 75,000 individuals has a great opportunity for research. Ross Loos is a young group still, and one should not be impatient. They have had difficult years and had to do a great deal of experimenting in medical economics.

Now that the group has outgrown its infancy and is firmly established, it is becoming increasingly interested in scientific problems. Research, however, is costly, and patients' contributions are not intended to support research laboratories. There is a middle way, and I hope that the group will see its way clear to publish an annual volume with the report of its activities and the result of its experiences and observations. It might look like advertising to them, but university hospitals are doing the same.

I asked Dr. Loos if it required much capital to start such a group. His answer was definitely, 'No.' Let five doctors already established in practice and representing various fields of medicine join, pool their resources, and continue their private practice. It will not require any capital. With 2000 subscribers they can safely start a periodic payment plan. And if the doctors are competent the group is bound to grow since the need is so tremendous everywhere.

Dr. Ross and Dr. Loos have done a fine and courageous job. They have paved the way into the future. This is the type of medical service I would like to see generalized and extended to ever larger groups. The financing could be done in different ways according to local conditions. Where compulsory health insurance seemed indicated, insurance premiums would finance the services. Where the population is too poor

central location (1355 Wilshire Ave.). It has all the equipment required for the practice of scientific medicine.

When the number of subscribers increased, a geographic problem arose. Los Angeles covers an enormous area, and it became difficult and time consuming for patients to call at the clinic and for doctors to make home visits. The solution was to establish branch clinics in the suburbs and adjacent cities. Ross-Loos today have twelve such branch clinics.

The group is growing and spreading constantly. Some time ago eighty employees of the telephone company in Pomona, a city forty miles from Los Angeles, expressed the desire to be served by the group. It was explained to them that it was impossible to establish a branch clinic for such a small group, that this would require a minimum of seven hundred and fifty subscribers. Anxious to have the benefits of the service, the telephone employees approached their friends working in other enterprises. The mayor became interested in the plan, and a few months later more than seven hundred and fifty employees applied for membership. Ross-Loos are now building a clinic in Pomona providing ample space for future development.

The group has no hospital of its own. It can use the facilities of any hospital of the city and respects the wishes of patients. For practical reasons, however, most subscribers are hospitalized in the Queen of the Angels Hospital, where the group has about 100 beds permanently occupied. Experience has shown that the cost of hospitalization per subscriber amounts to 22 cents a month, which is considerably less than a cent a day.

The Ross-Loos Medical Group of Los Angeles makes an excellent impression. The idea behind it is sound medically and economically. It represents modern scientific group medicine practiced in well-equipped medical centers. The whole system tends to develop preventive medicine first of all. If I were president of a life insurance company, I would not hesitate to grant the subscribers special rates. Under such a system the patient has not only a family doctor but a family medical center and has it at a price he can afford and can budget.

I am convinced that a policeman in Los Angeles has more and better care than many a millionaire. The success of the group proves that patients are satisfied with the services. If they felt that they were treated as numbers or that the personal relationship between them and their doctors had suffered they would back out very rapidly.

Under such a system the physician is "decommercialized." He no

longer has to sell his services on the open market. He is economically free and can do whatever the case requires without hearing the depressing question, "How much, doctor?" and without red tape. His remuneration is adequate, and this is why the group never had any difficulties in obtaining the services of well-trained, competent doctors.

Ross-Loos is not a consumers' but a producers' cooperative. Through the group committees, however, there is a close cooperation between clinic and subscribers. Both groups have the same interest. I think one need not be afraid that the doctors under such a system will make undue profits. At the present rates this could only be achieved by cutting down the services, and the patients would feel and resent this very soon. The patients, on the other hand, do not want underpaid physicians. They know that a good doctor is worth his price.

Every physician has the duty to contribute to the advancement of medical science, and a group of eighty-five physicians serving 75,000 individuals has a great opportunity for research. Ross-Loos is a young group still, and one should not be impatient. They have had difficult years and had to do a great deal of experimenting in medical economics.

Now that the group has outgrown its infancy and is firmly established, it is becoming increasingly interested in scientific problems. Research, however, is costly, and patients' contributions are not intended to support research laboratories. There is a middle way, and I hope that the group will see its way clear to publish an annual volume with the report of its activities and the result of its experiences and observations. It might look like advertising to them, but university hospitals are doing the same.

I asked Dr. Loos if it required much capital to start such a group. His answer was definitely, "No. Let five doctors already established in practice and representing various fields of medicine join, pool their resources, and continue their private practice. It will not require any capital. With 2000 subscribers they can safely start a periodic payment plan. And if the doctors are competent the group is bound to grow since the need is so tremendous everywhere."

Dr. Ross and Dr. Loos have done a fine and courageous job. They have paved the way into the future. This is the type of medical service I would like to see generalized and extended to ever larger groups. The financing could be done in different ways according to local conditions. Where compulsory health insurance seemed indicated, insurance premiums would finance the services. Where the population is too poor

to contribute to the cost of medical care, public funds would be required.

It is the service that counts. The Ross-Loos Medical Group has demonstrated what such a service can be and what it costs. This alone is a great contribution.

SASKATCHEWAN HEALTH SERVICES SURVEY COMMISSION



INTRODUCTION

THE present government of the province of Saskatchewan was elected on a platform that promised "to set up a complete system of socialized health services with special emphasis on preventive medicine, so that everybody in the province will receive adequate medical, surgical, dental, nursing and hospital care without charge." The government, of course, realized that the establishment of a complete network of health services covering all parts of the province would undoubtedly take con-

.....

In 1944, the first socialist government in North America was elected to power in the Canadian province of Saskatchewan. The Cooperative Commonwealth Federation, as the party was called, included in its campaign pledges "a complete system of socialized health services." The ballots were hardly counted when the new government invited Dr. Sigerist to come and serve as commissioner of the Health Services Survey Commission. Throughout September, 1944, he traveled through the province, consulted with scores of organizations and individuals, and worked with other members of the commission representing the medical profession, hospitals, dentists, nurses, and the government. On October 4 his report was presented to the Minister of Public Health. Dr. Sigerist was not, of course, a professional health administrator, and yet the realism of his report is reflected by the fact that within ten years most of his proposals were in effect. The report was published as an official document of the Government of Saskatchewan (Regina: Thomas H. McCutcheon, King's Printer) in 1944. In the text presented here, a few administrative sections have been omitted.

siderable time but was determined to make a beginning in providing such a network without delay. . . .

Any plans for the extension of medical services in the province must take its geography into account. The far northern part of the province is so sparsely populated that it will not be possible to supply it with complete medical services now. Little more can be done at the moment than to provide the minimum of medical care to the population through medical outposts from which patients may be evacuated to the centers by airplanes.

Settlement in the province is for the most part confined to the southern half, and this report will therefore primarily deal with this section of the province. Although there is a definite trend towards urbanization, which will in all probability continue with the development of industries, the majority of the population (66.9 per cent in 1941) is rural and lives widely scattered on a large area. It must also be taken into consideration that the economy of the province is based upon the production of one staple—wheat, a commodity which even under normal conditions is subject to wide variations in production and price. The situation is aggravated by the fact that the prosperity of the province depends to a large extent on sufficient rainfall.

Under the traditional system of medical care, physicians, dentists, and other medical personnel settled primarily in the cities where it was easier for them to make a living. Before the municipal doctor system was introduced, physicians could practice only in such rural areas where the income of the population was large enough to support them. In years of poor crops, they were forced to leave even such ordinarily prosperous regions. The insecurity inherent in the geography and economy of the province therefore makes it the more urgent to establish a system of socialized medical services on a provincial scale that will guarantee the people the basic services they need, and to which they are entitled at all times. In view of the predominantly rural population and their less developed medical facilities, any plan formulated for the future will have to give primary consideration to the development of rural medical services.

The history of the last two decades already reveals a marked trend towards the socialization of essential medical services. The establishment of a municipal doctor system, created by necessity, was a first step in this direction. The prevention, diagnosis, and treatment of tuberculosis, mental diseases, and, more recently, cancer and venereal diseases, have

become public services. Following this trend, the policy for the future must therefore be to finance an increasing number of medical services for an increasing number of people from public funds. This will be a gradual development, the pace of which will be determined by the personnel, equipment, and financial resources that can be made available for the purpose. The goal is clear: it must be to provide complete medical services to all the people of the province, irrespective of their economic status, and irrespective of whether they live in town or country. A promising beginning has already been made. Further steps can be taken without delay by using and extending existing facilities. The final steps may have to wait until the province can count on subsidies from the dominion, or on other sources of revenue.

In view of the fact that the time available to the commission was very short, this report is by no means complete, and further studies will have to be undertaken as outlined in section VII. The purpose of this report is to suggest basic policies for the near future in some of the most urgent fields and to recommend action that can be undertaken immediately.

RURAL HEALTH SERVICES

Health districts. One of the first tasks will be to divide the province into health districts, their number and boundaries to be determined in consultation with the Department of Municipal Affairs, Department of Education, and other agencies concerned. There can be no doubt that such a decentralization of activities will greatly increase the efficiency of the public health and medical services, while the principle of centralized direction will be maintained.

At the seat of every health district there should be a district health center headed by a full time medical officer of health. His functions should be to carry out the general public health measures that are commonly the task of a health department, and he should, in addition, supervise and coordinate all medical services and all activities that tend to promote the people's health. He should inspect, at periodic intervals, all health institutions of the district.

The district health center should be staffed with sanitary officers, public health nurses, dentists, and other specialists, if required, in a number to be determined by the size and needs of the population.

In view of the fact that the rural population is widely scattered, the district health center would send out traveling clinics, such as dental

clinics, mental hygiene clinics, and others, according to the needs of the population and should provide for consultant services, by specialists in various fields, to the physicians of the district.

The district health center should be equipped with a laboratory prepared to carry out chemical, bacteriological, and serological examinations. The question should be studied whether it would be possible to have a pathologist attached to the center, who, in addition to directing the laboratory, would perform autopsies in the hospitals of the district, act as medical examiner, and make examinations of tissues for the physicians of the district.

The district health center could be located on the premises of the major hospital of the district, so that its facilities would be available to the hospital.

District hospitals. A careful survey should be made of all hospital facilities available in any district. Where facilities are inadequate, provision should be made to increase the number of hospital beds, either by enlarging existing hospitals or by erecting new ones, since some existing hospitals might be more readily used as convalescent homes, hospitals for chronic patients, or old folks' homes.

The purpose of the district hospital or hospitals should be to give such treatments as cannot be given in the rural health centers, that is, major surgery and other specialized treatments. The surgeon should be appointed on a full-time basis. It is a waste to have well-trained surgeons engaged in general practice. In order to be eligible for appointment to a hospital, the surgeon as well as other specialists should be approved by the Royal College of Surgeons, the College of Physicians and Surgeons, or other similar bodies.

It would be desirable to have a full-time dentist and an eye, ear, nose, and throat specialist appointed to the hospital on a full-time basis, other specialists to be considered according to need.

Many rural hospitals find it difficult to secure a sufficient number of registered nurses. While there is no doubt that there is a great need for more fully trained nurses, wider use could be made of practical nurses or ward aides. One nurse in every hospital should be trained to handle the X-ray machine and the routine clinical laboratory work.

The district hospitals should be equipped with ambulances and, where necessary, with ambulance airplanes or helicopters. The ambulances should be part of the hospital equipment and should not be owned and operated by private companies.

In addition to serving the above-mentioned purpose, the district hospital should also serve as health center for the town in which it is located and its vicinity. The offices of the local doctors should be in the hospital so that they could use its facilities in their daily practice, provided the hospitals are not too far from the center of the town.

Rural health centers. The municipal doctor is the backbone of all medical services in this province. The municipal doctor system that has been functioning for twenty-five years has brought medical care to thousands of people who without it would not have had any medical attention. The system has stood the test of time and therefore should be maintained and developed. The policy should be to extend it and to correct certain defects. Among these should be mentioned the fact that the plans adopted so far show a great lack in uniformity. The model contract is rarely used, and a number of plans are in operation although they have been refused approval by the health services board.

Furthermore, most municipal doctors are unquestionably overburdened with work and underpaid, with the result that they have to accumulate contracts and have to engage in private practice in order to make a decent living. There is also a temptation for municipal doctors to practice major surgery without being fully prepared for it, because a doctor in such a case can obtain an additional contract. While the offices of some doctors are fairly well equipped, others undoubtedly lack the equipment required for the practice of scientific medicine. The following remedies are suggested:

1. In most cases, the rural municipality is too small a unit to organize an adequate medical service. The organization of rural health units should be encouraged, to comprise one or more municipalities and the towns and villages located therein.

2. The rural health unit should be served from the rural health center, a house containing the doctor's waiting room, office, a room for minor surgery, a delivery room, a small laboratory and approximately eight to ten maternity and general hospital beds. The center should be staffed by a registered nurse and one or more municipal doctors, their numbers to be determined by the area and population served. With better equipment provided in such a way, and with the assistance of a nurse, the rural physician's efficiency would be increased tremendously. Women could all be delivered at the center under the best possible conditions, and the doctor would be able to treat many patients on the spot without having to send them to the district hospital.

The population must be educated to seek medical advice if possible at the center, so that the doctor will not have to spend a large part of his time driving around the country. The population must come to realize that the doctor can give infinitely better service at the center than in the homes, and if a patient requires special attention and treatment he will be hospitalized at the center without formalities.

3. The provincial government should set a minimum salary to be paid municipal doctors, and the salary should be increased with years of service according to a scale to be established. The salary should represent net income. In other words, the rural health center, equipped with the basic equipment for medical practice, including a portable X-ray machine, and a small clinical laboratory, should be provided from public funds. The doctor, in addition, should receive a lump sum to cover his traveling expenses, the amount to be determined by the size of the area covered. Doctors should be granted annual vacations with pay and, every few years, a leave of absence for postgraduate study. A superannuation fund should be set up for them.

4. While the principle should be maintained that local governments should contribute to the cost of health services, and should continue to have an important share in their administration, yet the provincial government will have to subsidize the services through grants in order to secure minimum standards. The grants should not be uniform but should vary according to the financial resources of the rural health unit served.

Under such a system the member of a farm family who becomes sick will seek advice at the rural health center, or in special cases will be visited in his home by the municipal doctor. At the rural health center, he will receive examination and treatment and will be hospitalized if necessary. Patients requiring major surgery or specialized treatment would be referred to the nearest district hospital. Rare cases presenting difficulties in diagnosis or requiring neurosurgery, chest surgery, or similar highly specialized treatments would be referred to the large centers such as can be found in Saskatoon, Regina, Moose Jaw, etc.

The municipal doctor will continue to be local health officer. He will continue to vaccinate and immunize children to give school medical services, and will cooperate with the traveling clinics sent out from the district health centers.

Health services commissions. The rural health program must be carried out with the active participation of the population. Each rural

health unit should have its health services commission consisting of representatives of the technical personnel, the teachers and representatives of the rural municipalities, towns, and villages involved. The commission should meet at regular intervals to discuss the health problems of the unit.

Representatives of the local health services commissions and of the district hospitals should constitute the district health services commission, of which the district health officer would be chairman. This commission would hold annual or semiannual conventions, at which the health problems of the district would be discussed.

URBAN HEALTH SERVICES

The problem of providing health services to the inhabitants of the cities is less difficult and less urgent than the problem of rural health services. More hospitals and more medical personnel are available. The major problem is to bring complete medical services to all inhabitants of the cities at a price they can afford. At present there are already medical service plans in existence under which individuals and families can purchase medical care through periodic payments, such as the Mutual Medical and Hospital Benefit Associations, Medical Services Incorporated of Regina, The Canadian National Railway Employees' Medical Aid Association, etc. All these plans have brought great benefits to the individuals involved, but they all reach only certain groups, and their benefits are not comprehensive enough.

At the moment, the most practical policy may be the gradual extension of public services so as to include maternity care and hospitalization, supplemented by a system of compulsory health insurance, the details of which would have to be worked out.

HOSPITALS

The bed capacity of the province in 1943 was 3209, including Sanatoria and Red Cross outposts but not including mental hospitals. In 1942, the bed capacity was 3446. The decrease was due to the fact that several rural hospitals and Red Cross outposts were closed for lack of personnel. Even with a capacity of 3500 general hospital beds, the province would be short at least 1000 to 1500 beds.

In view of the difficulties of transportation, particularly during the long winter, the policy should be not to crowd hospital patients into the large centers but to treat them whenever possible in the periphery. The

policy, therefore, should not be to build many new large hospitals in the cities, or to add considerable extensions to existing ones, but rather to erect a larger number of small hospitals in rural districts. Fifty rural health centers of ten beds each would provide 500 additional hospital beds and relieve the larger hospitals of thousands of patients. A 500 bed university hospital in Saskatoon that is needed for instruction, research, and specialized services would probably be a sufficient increase so far as the two large cities are concerned. The policy should be to decongest the large hospitals by removing chronic patients and convalescents to special institutions.

There is a great need for additional old folks' homes. At present, old folks are taken care of in one government institution at Wolseley, in various charitable institutions such as St. Anthony's Home at Moose Jaw, in general hospitals, and sometimes in private homes, where they are looked after for the \$25.00 pension. It would be inadvisable to consider the construction of some large institution, since the old folks wish to die near the place where they lived, and where they have friends. It would be preferable to establish a larger number of small homes in various localities, which could be operated at little cost, and to pay a subsidy to institutions and individuals that attend to the aged.

The suggestion has been made by various small hospitals that considerable savings could be effected if the various health institutions of the province could purchase supplies through the Purchasing Board of the Provincial Government. The government should also attempt to purchase equipment from the armed services as soon as it becomes available.

Free hospitalization for the entire population should be the goal. Counting the per capita annual expenditure for hospitalization at \$3.60, according to the estimate given by Dr. J. J. Heagerty to the Special Committee on Social Security, the cost of hospitalization for the province would amount to about three million dollars.

The experience of New Zealand should be given careful consideration. In New Zealand, hospitalization in a public hospital is free for the whole population. The government pays to public hospitals 9s per patient day, and the deficit between that 9s and the cost of operating the hospital during the year is split into two. One half of this amount is borne by the hospital district, the other half by the government.

Free hospitalization and medical treatment for maternity cases might be considered as a first step, a service that would cost about one million

dollars a year (\$30.00 for hospital costs and \$30.00 for prenatal care, delivery, and postnatal care).

SPECIAL HEALTH SERVICES

Tuberculosis. The system of tuberculosis control and treatment carried on by the Anti-Tuberculosis League in the province is excellent, and its efficiency is demonstrated by the results obtained. The league is considering a plan for the improvement of the aftercare of patients. An aftercare home for the maximum benefit of elderly patients who are infectious, and for the most part homeless and unable to return to their original community for care, with accommodation for approximately forty, is without any doubt very desirable.

Mental diseases. The mental diseases present a very serious and very acute problem. Both mental hospitals, the one in North Battleford and the one in Weyburn, are frightfully overcrowded. The most urgent needs seem to be the following:

1. An institution for mental defectives must be given first consideration. At present there are about 800 mental defectives at Weyburn, and it is bad to have them in the same institution as psychotic patients. A special institution, preferably in the form of a colony with facilities for classroom instruction, workshops, and a farm, is therefore highly advisable. It should be large enough to accommodate at least 1500 individuals.

2. The removal of mental defectives from Weyburn would relieve that institution of some of its overcrowding, but the hospital in North Battleford is also overcrowded by 50 per cent and must be relieved. The establishment of a special institution for senile patients, who do not require treatment but custodial care, might be considered. This would relieve the two mental hospitals of about 400 patients.

3. Epileptics. According to Dr. L. H. McConnell there are over 5000 epileptics in the province. A number of them can be improved or cured through surgical procedures. Others are so mentally deteriorated that they have to be confined to mental hospitals. The majority of them, however, is perfectly able to work, but has great difficulty in finding permanent employment. Consideration should therefore be given to the establishment of a colony farm with workshops, where such patients could work under medical supervision.

4. Sterilization. The sterilization of mental defectives should be given

careful consideration. Much experience has been gained in this field during the last fifty years in America and Europe. One should not be deterred by the fact that Nazi Germany has practiced sterilization in a brutal and wholesale manner, but should study the results obtained in such countries as the Scandinavian countries, Switzerland, and some of the American states where sterilization has been practiced humanely and cautiously with good results.

5. Mental hygiene services. In order to deal with the many cases of mental maladjustment, mental hygiene clinics should be established, in Regina, possibly in connection with the psychopathic ward, and in Saskatoon, in connection with the projected university hospital. These two clinics would attend primarily to the population of the cities and to cases referred to them from outlying districts. In addition to these two clinics, it would be advisable to consider the establishment of traveling mental clinics in connection with the district health centers. These traveling clinics, staffed with a psychiatrist and nurse, would tour the districts and work in consultation with the municipal doctors and school teachers. Such a measure would in all probability decrease the need for hospitalization and would permit the treatment of milder cases in their homes.

6. Personnel. There is undoubtedly a great shortage of psychiatric personnel, and, before effective mental hygiene services can be inaugurated, it will be necessary to secure personnel fully trained in modern methods of psychiatry and psychology.

7. Administration. The dual administration of mental hospitals by the Department of Public Works and the Department of Public Health has caused various difficulties, and, since mental hospitals are primarily health institutions, it would seem preferable to place them under the sole responsibility of the Department of Public Health.

8. Since most mental patients are afflicted for many years, the cost of their treatment is an unbearable burden for most families, and all services given to mental patients should, therefore, be financed from public funds.

Cancer. The Cancer Control Act 1944 foresees that any person afflicted with or suspected of being afflicted with cancer shall be entitled to care and treatment at the expense of the province. The intention of the act undoubtedly is to encourage people, and to make it as easy as possible for them, to seek the most expert medical advice and treatment at the slightest suspicion of cancer. The act should therefore be interpreted as

broadly as possible. The two cancer clinics, in Regina and Saskatoon, have already rendered invaluable services, and the number of patients examined and treated has increased from year to year. In formulating policies for the future, the following points should be considered:

1 While at present, examination, radiological treatment, and hospitalization are provided without charge, cancer patients still have to pay for the cost of operations. This is undoubtedly against the intention of the act, and the cost of operations should be defrayed by the province.

2 Traveling expenses of patients referred to one of the clinics by a physician may weigh heavily on the budget of individuals living at great distances. The compensation of traveling expenses from provincial funds may therefore be considered.

3 While it is true that a large percentage of all patients examined by the clinics is found to be suffering from other diseases than cancer, yet it would not be sound to make a charge in the case of negative diagnosis. This would act as a deterrent. Accurate diagnosis in all cases where the suspicion of cancer prevails represents an available public service. The increasing load of work put upon the clinics must be met with an increasing number of personnel.

4 At present both clinics are too small for the tasks they have to fulfill, but the clinic in Regina is infinitely better equipped than that in Saskatoon. The first step therefore should be to place the clinic at Saskatoon on at least the same level of efficiency as the Regina clinic, and to appoint the physicians of the clinic on a full time basis. The future development should envisage the incorporation of the Saskatoon clinic into the university hospital and the development of a cancer hospital in Regina.

5 It is hardly necessary to emphasize that the diagnosis and treatment of cancer is a highly developed specialty and that only men who are fully trained in the field of oncology should be appointed to the clinics. Since there will be a demand for more specialists in cancer work in the very near future, steps should be taken for the selection and training of young medical graduates in all aspects of the field.

Venereal diseases The goal must be the complete eradication of these diseases in the near future. This has already been achieved in a number of European countries and there is no reason why it should not be possible in this province, where there are only a few large cities. The following measures might be considered in addition to the already existing ones:

1. Provision of medical treatment at the expense of the province for all individuals suffering from venereal diseases without a means test.

2. Establishment of a separate division of venereal disease control in the provincial Department of Public Health, to work in close cooperation with the armed forces.

3. Appointment of additional personnel for the tracing of contacts. Once health departments will be established in every health district, the tracing of contacts will be greatly facilitated.

4. Intensified educational measures, although the people who are most likely to spread venereal disease are the most difficult to reach through education (transients, etc.).

Dentistry. Dental conditions are appalling in this province. A large percentage of the population has no dental care whatsoever, and the overwhelming majority of the people has not sufficient dental care. It is no exaggeration to say that dentistry in its present organization has failed to serve the population, whatever the causes may be. Before the war, in 1938, the province had 210 dentists or 1 per 4481 population. In 1943 the province had 147 dentists or 1 per 6095 population. In other words, even if all dentists of the province who are in the armed forces should resume their former practice, the population would still not be served, particularly since most dentists practice in the large cities.

Since the traditional system has failed, and since dental care is an essential service in the maintenance of the people's health and prevention of disease, the government must assume responsibility for the provision of dental care, and the following steps should be considered:

1. Provision of dental care to school children to the age of sixteen.

- (a) In urban centers establishment of school dental clinics with full-time salaried dentists giving free dental care to school children.

- (b) In rural districts traveling dental clinics sent out from the district health centers to give free dental care to school children in the rural health centers.

2. A later step that might be considered would be the appointment of full-time salaried dentists on the staffs of district hospitals, giving dental care to the patients served by the hospital.

In view of the tremendous shortage of dentists the development could only be a gradual one.

Rehabilitation. While the armed forces, under the pressure of the war, have developed far-reaching programs of rehabilitation for disabled men, there are practically no institutions in the province available for

the rehabilitation and reintegration into society of civilians disabled by illness. No medical program is complete that does not foresee ways and means of rehabilitating and reeducating former patients. Grants should be made available to the victims of accidents and diseases that would enable them to acquire the vocational training best suited to their condition, either in already existing educational institutions, or in special institutions that may become available from the armed forces. A very good program has recently been developed by the United States Public Health Services, information about which could be obtained from Washington.

Indians. The Indians, about 13,700, scattered throughout the province, constitute a reservoir of disease. In 1941, close to half of all deaths of Indians, 174 out of 408, were due to infectious and parasitic diseases. The tuberculosis death rate of Indians was 592 per 100,000 population, compared with 21 among the white population, in 1943. Ill health of the Indians is a menace to the health of the white population since the two races mix freely. The Indians would, in all probability, receive more medical attention if they could be included into the provincial system of rural health services. An agreement might be reached with the dominion government, under which the province would assume responsibility for the health services of the Indians, and would be compensated for it by the dominion government. A similar agreement has already been made in the field of tuberculosis control.

PUBLIC HEALTH SERVICES

The public health services of the province are highly developed and are carried on very efficiently. Their efficiency will be increased still further by the establishment of health districts with full-time medical officers of health. A number of points concerning public health services have already been mentioned in this report, and a few additional recommendations follow:

Sanitation. Much remains to be done in the field of sanitation. There are many bylaws on paper which cannot be enforced for lack of personnel. The part-time health officer in the smaller cities and towns is greatly handicapped by the fact that he is a general practitioner, who cannot afford to antagonize his actual or potential patients. The appointment of full-time health officers in the various health districts will improve the situation immediately, and will permit greater attention to the inspection of restaurants, food markets, etc.

1. Provision of medical treatment at the expense of the province for all individuals suffering from venereal diseases without a means test.

2. Establishment of a separate division of venereal disease control in the provincial Department of Public Health, to work in close cooperation with the armed forces.

3. Appointment of additional personnel for the tracing of contacts. Once health departments will be established in every health district, the tracing of contacts will be greatly facilitated.

4. Intensified educational measures, although the people who are most likely to spread venereal disease are the most difficult to reach through education (transients, etc.).

Dentistry. Dental conditions are appalling in this province. A large percentage of the population has no dental care whatsoever, and the overwhelming majority of the people has not sufficient dental care. It is no exaggeration to say that dentistry in its present organization has failed to serve the population, whatever the causes may be. Before the war, in 1938, the province had 210 dentists or 1 per 4481 population. In 1943 the province had 147 dentists or 1 per 6095 population. In other words, even if all dentists of the province who are in the armed forces should resume their former practice, the population would still not be served, particularly since most dentists practice in the large cities.

Since the traditional system has failed, and since dental care is an essential service in the maintenance of the people's health and prevention of disease, the government must assume responsibility for the provision of dental care, and the following steps should be considered:

- I. Provision of dental care to school children to the age of sixteen.

- (a) In urban centers establishment of school dental clinics with full-time salaried dentists giving free dental care to school children.

- (b) In rural districts traveling dental clinics sent out from the district health centers to give free dental care to school children in the rural health centers.

2. A later step that might be considered would be the appointment of full-time salaried dentists on the staffs of district hospitals, giving dental care to the patients served by the hospital.

In view of the tremendous shortage of dentists the development could only be a gradual one.

Rehabilitation. While the armed forces, under the pressure of the war, have developed far-reaching programs of rehabilitation for disabled men, there are practically no institutions in the province available for

the rehabilitation and reintegration into society of civilians disabled by illness. No medical program is complete that does not foresee ways and means of rehabilitating and reeducating former patients. Grants should be made available to the victims of accidents and diseases that would enable them to acquire the vocational training best suited to their condition, either in already existing educational institutions, or in special institutions that may become available from the armed forces. A very good program has recently been developed by the United States Public Health Services, information about which could be obtained from Washington.

Indians. The Indians, about 13,700, scattered throughout the province, constitute a reservoir of disease. In 1941, close to half of all deaths of Indians, 174 out of 408, were due to infectious and parasitic diseases. The tuberculosis death rate of Indians was 592 per 100,000 population, compared with 21 among the white population, in 1943. Ill health of the Indians is a menace to the health of the white population since the two races mix freely. The Indians would, in all probability, receive more medical attention if they could be included into the provincial system of rural health services. An agreement might be reached with the dominion government, under which the province would assume responsibility for the health services of the Indians, and would be compensated for it by the dominion government. A similar agreement has already been made in the field of tuberculosis control.

PUBLIC HEALTH SERVICES

The public health services of the province are highly developed and are carried on very efficiently. Their efficiency will be increased still further by the establishment of health districts with full-time medical officers of health. A number of points concerning public health services have already been mentioned in this report, and a few additional recommendations follow:

Sanitation. Much remains to be done in the field of sanitation. There are many bylaws on paper which cannot be enforced for lack of personnel. The part-time health officer in the smaller cities and towns is greatly handicapped by the fact that he is a general practitioner, who cannot afford to antagonize his actual or potential patients. The appointment of full-time health officers in the various health districts will improve the situation immediately, and will permit greater attention to the inspection of restaurants, food markets, etc.

Conditions of water supply and sewage disposal are very bad in many communities and on the farms. An incentive to improve them might be given in the following ways:

1. If a town considers the possibility of constructing a water supply or sewage system, it should not have to take recourse to private contractors to have a survey and estimate made, but should have this service provided free of charge by the engineers of the Department of Public Health.

2. The Department of Public Health should have model plans available for supplying an individual farm with water and for the disposal of sewage and refuse. Such plans, with an estimate of cost, should be brought to the attention of the farmers, and in good years they might well be inclined to improve the sanitary conditions of their farm homes in such a way.

Health education. All over the province, there is a crying demand for health education. This is a very encouraging sign because it shows that the population is fully aware of the significance of health and is receptive for instruction and advice.

Health education obviously begins in the school, and to that end it may be necessary to revise the curriculum of the normal schools. The idea is not to make health officers of the school teachers but to draw their attention to physical and mental disease conditions that may develop in children, and to teach them how to develop sound health habits in their students. Through the children the teacher may be able to educate the parents, and the teacher is the most powerful ally of the physician and nurse in that he can draw their attention to certain children.

In promoting health through education, all civic organizations such as the homemakers clubs and the voluntary health organizations, etc., must be mobilized permanently. The health authorities will work in close cooperation with the organs of the physical fitness and recreation program and similar organizations.

It was found that the population is frequently not informed about health legislation enacted for its benefit, and since the language of such acts is not always easy to understand the content of important health legislation should be brought to the people in pamphlets written in a popular style. This has been done very successfully in the United States.

The establishment of a division of health education in the Department of Public Health is a very promising step, the importance of which cannot be overestimated.

Industrial hygiene. The establishment of a division of industrial hygiene in the Department of Public Health should be considered. It is a well-known fact that industrial hygiene is more readily neglected in small plants than in large ones, and, with increasing industrialization of the province, the need for measures of industrial hygiene will be increasingly felt.

Nutrition. The provision of free hot noon lunches to all school children of the province would be a most important measure to improve the nutritional standard of the population, and would at the same time be an important measure of health education.

PERSONNEL

There can be no doubt that in the future more and more medical personnel will be employed on a salaried basis. At the present time already some of the finest medical work is performed in the province by salaried doctors, as in the fields of public health, tuberculosis, mental diseases, cancer control. Salaries paid at present are as a rule too low, and the salary scale should be revised carefully, if such positions are to attract the best type of best-trained physicians. The following principles should be observed:

1. Salaries should be adequate and commensurate with the long period of time spent by the physician in his training.
2. Salaries should be graded according to experience and responsibility. After having given good service for a large number of years, the physician should have a higher income than he had as a beginner.
3. Salaried physicians should be granted annual vacations and, every few years, a leave of absence for postgraduate study, with full salary.
4. A system of superannuation should be established for all salaried physicians.

Physicians. The number of physicians practicing in the province is far too small to give adequate medical care to the entire population. In 1943, only 408 active physicians, including those who were not actually engaged in practice, were available for a population of about 896,000, or 1 to every 2196. The distribution was very uneven. While the eight cities had 1 doctor per 846 population, the rural districts had only 1 per 3315. The war has obviously depleted the ranks, but on the other hand it must be remembered that many physicians practicing now are over age and would not be in practice if it were not for the war. Of those

in practice today, 45 per cent are 55 years old or over, so that after the war the number of doctors available will still be too small.

The conditions of practice in the province have so far not been such that they would have attracted a large number of doctors from other provinces. The medical school of the University of Saskatchewan gives preclinical instruction to twenty-four students a year, who must complete their studies in other universities of the dominion. Experience has shown that only 26 per cent of these few students ever return to the province, and that the best students of the group remain in other provinces, where attractive positions are offered to them.

The only remedies to increase the number of physicians in the province are to make conditions of practice more attractive and to develop the medical school of the university into a complete grade A medical school. The creation of such a school would provide an ideal opportunity to set a new pattern for medical education, to train the physician not of yesterday but of tomorrow, the type of physician that the province will need for its social medical service. While the number of students admitted every year might have to be limited in accordance with the facilities available for instruction, there should be no discrimination as to race, sex, or economic status. The province must provide a sufficiently large number of scholarships that will permit qualified students who have no means of their own to study medicine. In exchange, the province may well require that such students spend a certain number of years in rural practice.

The medical school will need a university hospital of at least 500 public beds for scientific teaching, clinical instruction, and research. The hospital, besides serving the needs of the university, would become the most important medical center of the province. It would include the already existing cancer clinic and polio clinic. It could include a much-needed psychiatric clinic, orthopedic clinic, clinic for the treatment of rheumatic fever, and possibly other specialized clinics.

The university medical school and hospital would raise the standard of medicine throughout the province. It would become the logical center for medical research at large, and for research in the problems peculiar to the province. It could serve as a center for postgraduate training and could send out specialists to the various health districts as consultants.

The University of Saskatchewan estimates that the cost of building and equipping a university hospital and medical school would amount

to two million dollars and that the cost of operating the medical school might be one hundred and fifty thousand dollars [a year].

Dentists. As was mentioned before, the province has a crying need for a larger number of dentists. A first step to remedy the situation might be the provision of conditional grants that would enable students to study dentistry in one of the five dental schools in the country, on the condition that after graduation they would serve for a set number of years in some of the dental services of the province. Should a student fail to do this he would have to refund the grant.

If such a measure would fail to increase the number of dentists sufficiently, the creation of a school of dentistry at the university would have to be considered.

On the whole, it is to be expected that the establishment of a certain number of adequately remunerated dental positions in the health services of the province would attract dental graduates from other provinces.

Nurses. The national registration of nurses carried out in March, 1943, revealed that Saskatchewan possesses 2901 nurses, of whom, however, only 999 were actually engaged in nursing, or 1 per 987 population, which is a rate of 1.23 nurses per 1000. It is estimated that at least two nurses are required for every 1000 population, so that there is an undeniable shortage in the province. Since only 138 nurses from Saskatchewan are in the armed forces, and not all of them will return to the province, the situation after the war will hardly show any improvement.

The weakness of the nursing system is that, after three years of training and several years of practice, most nurses marry, and their services are lost to the community. While the married nurses represent a reserve that may be called upon in years of emergency, there is no doubt that the system requires a steady stream of student nurses to fill the ranks and if possible to increase them.

The following points might be considered to relieve the situation:

1. Improvement of working and living conditions of nurses, with the provision of superannuation. The provincial government, in consultation with the Saskatchewan Registered Nurses' Association, should establish minimum requirements as to salaries, working hours, living quarters, etc., of nurses employed in hospitals, and should refuse to pay grants to hospitals that do not meet these requirements. Nurses and all other hospital employees should have the benefits of workmen's compensation.

2. Provision of scholarships and bursaries to enable graduate nurses

in practice today, 45 per cent are 55 years old or over, so that after the war the number of doctors available will still be too small.

The conditions of practice in the province have so far not been such that they would have attracted a large number of doctors from other provinces. The medical school of the University of Saskatchewan gives preclinical instruction to twenty four students a year, who must complete their studies in other universities of the dominion. Experience has shown that only 26 per cent of these few students ever return to the province, and that the best students of the group remain in other provinces, where attractive positions are offered to them.

The only remedies to increase the number of physicians in the province are to make conditions of practice more attractive and to develop the medical school of the university into a complete grade A medical school. The creation of such a school would provide an ideal opportunity to set a new pattern for medical education, to train the physician not of yesterday but of tomorrow, the type of physician that the province will need for its social medical service. While the number of students admitted every year might have to be limited in accordance with the facilities available for instruction, there should be no discrimination as to race, sex, or economic status. The province must provide a sufficiently large number of scholarships that will permit qualified students who have no means of their own to study medicine. In exchange, the province may well require that such students spend a certain number of years in rural practice.

The medical school will need a university hospital of at least 500 public beds for scientific teaching, clinical instruction, and research. The hospital, besides serving the needs of the university, would become the most important medical center of the province. It would include the already existing cancer clinic and polio clinic. It could include a much-needed psychiatric clinic, orthopedic clinic, clinic for the treatment of rheumatic fever, and possibly other specialized clinics.

The university medical school and hospital would raise the standard of medicine throughout the province. It would become the logical center for medical research at large, and for research in the problems peculiar to the province. It could serve as a center for postgraduate training and could send out specialists to the various health districts as consultants.

The University of Saskatchewan estimates that the cost of building and equipping a university hospital and medical school would amount

to two million dollars and that the cost of operating the medical school might be one hundred and fifty thousand dollars [a year]

Dentists As was mentioned before, the province has a crying need for a larger number of dentists. A first step to remedy the situation might be the provision of conditional grants that would enable students to study dentistry in one of the five dental schools in the country, on the condition that after graduation they would serve for a set number of years in some of the dental services of the province. Should a student fail to do this he would have to refund the grant.

If such a measure would fail to increase the number of dentists sufficiently, the creation of a school of dentistry at the university would have to be considered.

On the whole, it is to be expected that the establishment of a certain number of adequately remunerated dental positions in the health services of the province would attract dental graduates from other provinces.

Nurses The national registration of nurses carried out in March, 1943, revealed that Saskatchewan possesses 2901 nurses, of whom, however, only 999 were actually engaged in nursing, or 1 per 987 population, which is a rate of 1.23 nurses per 1000. It is estimated that at least two nurses are required for every 1000 population, so that there is an undeniable shortage in the province. Since only 138 nurses from Saskatchewan are in the armed forces, and not all of them will return to the province, the situation after the war will hardly show any improvement.

The weakness of the nursing system is that, after three years of training and several years of practice, most nurses marry, and their services are lost to the community. While the married nurses represent a reserve that may be called upon in years of emergency, there is no doubt that the system requires a steady stream of student nurses to fill the ranks and if possible to increase them.

The following points might be considered to relieve the situation:

1. Improvement of working and living conditions of nurses, with the provision of superannuation. The provincial government, in consultation with the Saskatchewan Registered Nurses' Association, should establish minimum requirements as to salaries, working hours, living quarters, etc., of nurses employed in hospitals, and should refuse to pay grants to hospitals that do not meet these requirements. Nurses and all other hospital employees should have the benefits of workmen's compensation.

2. Provision of scholarships and bursaries to enable graduate nurses

to take postgraduate work that will prepare them for administration, teaching, and supervision in the public health field and hospitals.

3. Financial assistance for the establishment of a central nurses' placement bureau. Such a bureau would undoubtedly be a great help, particularly to small hospitals, for which it is often difficult to find nurses.

4. At present eleven hospitals have approved schools of nursing in the province and thus can avail themselves of the services of student nurses. With suitable supervision, it should be possible to arrange for student nurses to receive part of their experience in small hospitals, which now cannot offer facilities that justify the establishment of a school. Service in a small rural hospital would be a valuable experience to the nurse.

5. The shortage of nurses in rural hospitals, sanatoria, and mental hospitals could also be partly remedied by the employment of practical nurses or nurses' aides who would assist nurses in their work. Standards should be set for the training and registration of such subsidiary nursing personnel.

6. Nurse-midwives. While it is desirable to have women delivered by physicians, if possible in a maternity home, there are still numerous sections of the province that have no physician at all, and that, particularly during the winter, are completely cut off from hospitals. In such regions, a nurse-midwife, that is, a nurse trained in midwifery, could render invaluable services without encroaching upon the field of the physician. A course would have to be devised for which the system practiced in Alberta, England, and other countries would have to be consulted.

Medical social workers. Consideration should be given to the training of medical social workers who would be attached to the larger hospitals and to the district health centers. The experience of the United States and other countries has shown the great value of such work in following up discharged hospital and sanatoria patients, investigating home environment, and similar tasks. The psychiatric services are particularly in need of such social workers, who would also relieve the shortage of public health nurses. A course for the training of medical social workers could be developed at the university.

Laboratory technicians. The three year course offered by the university for the training of laboratory technicians, supplemented by a one year apprenticeship in an approved laboratory, is excellent and cannot be improved. There is a shortage of personnel at the moment, but this

is largely due to the war and it is to be expected that more students will enroll after the war

Physiotherapists At present there are no regulations concerning the practice of physiotherapy so that the public has no means of ascertaining who is a qualified masseur or general physiotherapist. An association of physiotherapists was organized on September 30, 1944, and it would be advisable, in consultation with them and the Canadian Association of Physiotherapy, to set standards and require a license for the practice of physiotherapy

RECOMMENDATIONS FOR IMMEDIATE ACTION

1 Establishment of a Saskatchewan health services planning commission whose immediate tasks would be the following

- (a) To determine the cost of the various services recommended
- (b) To outline the boundaries of the health districts in consultation with other departments of the government
- (c) To work out in detail the needs of one or two sample districts to determine the services required to satisfy these needs and their cost
- (d) To make an inventory of those municipalities and L.I.D.'s which at present have no medical service whatsoever and to determine what action has to be taken to relieve them without delay
- (e) To study a scheme of compulsory health insurance for the population of the eight cities
- (f) To assist the government in planning whatever services are being considered at the moment

2 To select, as soon as feasible, qualified young medical graduates for postgraduate study notably in the fields of public health, psychiatry, and cancer control

3 To select qualified registered nurses for postgraduate training in midwifery

4 To build a home for mental defectives in order to relieve the untenable situation of the two mental hospitals

5 To lay plans for the extension of the medical school and for the construction of a university hospital

6 To lay plans for hospitalization and prenatal care delivery, and postnatal care of all maternity cases, from public funds, as a first step toward a system of complete free hospitalization

7 To provide for complete medical services to old age pensioners

widows, and orphans, and to patients suffering from mental diseases and venereal diseases, from public funds.

8. To establish, as soon as feasible, dental school clinics in the cities and traveling dental clinics in the rural districts, providing dental care to school children to the age of sixteen, from public funds.

The commissioner wishes to express his deeply felt appreciation to all the members of the commission, and particularly to its secretary, Dr. Mindel C. Sheps, for their splendid cooperation. He also wishes to express his gratitude to the Deputy Minister of Public Health, the members of his staff, and the members of many other departments of the government for the valuable assistance they have given him at all times.

MEDICAL CARE FOR ALL THE PEOPLE



THERE can be no doubt that social security is one of the most acute problems of our time. The many millions of working men and farmers serving in the armed forces of every country and the millions of workers, men and women, engaged in vital industries are justified in asking what their future will be after the war. They all have employment today, but they remember what conditions were yesterday during the long period of economic depression that followed the crisis of 1929, and they are wondering what life will be tomorrow. Will it be a return to the misery of unemployment, to the dole, the means test, and ill-paid relief work? Or, having accepted the duty to work, will they have the right to work and through their labor to acquire security for themselves and their families? Will they be able to obtain security while preserving and improving their democratic institutions, or will the price for it be the acceptance of tyranny?

Basic issues can be dodged in a short war, but not in a long one like

.....
Five years after the first national health bill was introduced in the United States Congress, another, more far reaching bill, a national health insurance and public health bill, was introduced by Senators Wagner and Murray and Congressman Dingell. At about the same time, the national government of Canada was debating somewhat similar legislation. Dr. Sigerist was invited to Ottawa by the Health League of Canada and the Voluntary Committee on Health of the Canadian Senate and House of Commons to explain the American proposals and to answer questions about medical care organization. In this paper his formal address, given on February 10, 1944 and his answers to questions are recorded. The paper was published in the *Canadian Journal of Public Health* 35 253-267, July, 1944. An adaptation was also published in *Health* (Ottawa), Spring, 1944, pp 5-7, 23-25

every year from tuberculosis, while 30,000 are under treatment. You lose every year 900 young women, mothers and wives, from causes related to childbirth, and 15,000 children die during their first year of life. We still have venereal diseases ravaging the population, although we know these diseases and have effective treatments that would permit us to eradicate them. Medicine has infinitely more to give than the people actually receive. Why these shortcomings? The reason is easily apparent. Today in this, as in many other fields of human endeavor, technology has outrun social organization. We have the scientific and technical means needed to overcome many diseases, but not yet the social organization of medicine that would permit us to apply them fully. Science progressed rapidly from the seventeenth century on; medicine became scientific, highly technical, highly specialized, and very costly. The cost of medical care grew more rapidly than the purchasing power of the population. It should be fairly obvious that a new medical science, called upon to serve a new type of society, requires new forms of medical service. We must create the social organization of medicine that will permit us to make full and unrestricted use of its technology.

What can be done? Let us agree first on some general principles. I think we agree that all the people should have medical care, irrespective of race, creed, sex, or economic status, and irrespective of whether they live in town or country. I think we also agree that all the people should have not just some medical care but the best possible care. The whole modern technology of medicine should be available to them, including the services of the general practitioner, the specialist, the nurse, the hospital, and laboratory. We also agree that prevention is better and also cheaper than cure, and that preventive medical services should therefore be in the foreground of all activities. For 5000 years people have fallen sick and, once sick, have called upon a doctor, who endeavored to restore them to health. Today we already have the knowledge and means that would permit us to reverse this old relation. The doctor in the future must see the people before they become seriously ill and must advise them how to maintain their health. More and more he will become an educator.

The provision of medical services to the population has two aspects, one economic and one medical. Both must be considered and studied together because they are inseparable. Indeed the best economic plan defeats its own purpose if the money is used to finance a poor type of medical service, and on the other hand the best medical plan must col-

lapse if it is not properly financed. Illness is an unpredictable risk for the individual family, but we know fairly accurately how much illness a large group of people will have, how much medical care they will require, and how many days they will have to spend in hospitals. In other words, we cannot budget the cost of illness for the individual family but we can budget it for the nation. The principle must be to spread the risk among as many people as possible and to pool the resources of as many people as possible. In other words, we must apply the principle of insurance, with which everybody in America is familiar.

In Canada as well as in the United States there has been a great deal of experimenting in recent years with voluntary health insurance plans. I am familiar with most of them, and in 1940 I spent ten weeks traveling through the states in order to see a large number of such plans in action. We have private group clinics that give medical care to people on a prepayment plan. The best-known clinic of that type is the Ross-Loos Medical Group in Los Angeles which serves about 75,000 people through a large medical center and branch clinics staffed by over eighty physicians. For a monthly contribution of \$2.50, it gives complete—and I may add excellent—medical care, including hospitalization, to its subscribers. I am sure that a policeman in Los Angeles served by the Ross-Loos Group gets more and better medical care than many rich men in New York, because he is not afraid of the cost and, at the slightest symptom, calls at the clinic without hesitation. Other similar groups have been organized along the line of consumers' cooperatives, and the best known example of that type is the Farmer's Union Cooperative Hospital Association in Elk City, Okla., which was built up and developed by Dr. Michael A. Shadid. The hospital is owned and maintained by the cooperators and has given excellent services to farmers of very moderate income. At the moment, medical service plans controlled by medical societies are in operation in sixteen of our states and in several localities of three other states. They cover about 1,000,000 individuals but are, as a rule, unsatisfactory, because they protect the people only against major health risks. How great the demand for insurance is has been demonstrated by the rapid development of the Blue Cross hospitalization plans, which today include about fourteen million people. The protection they offer, however, is limited to hospitalization and does not include medical services.

The experience of the last fifteen years in the United States has, in my opinion, demonstrated that voluntary health insurance does not solve

the problem of the nation. It reaches only certain groups and is always at the mercy of economic fluctuations. The Blue Cross plans were launched at the bottom of the depression and developed with an expanding economy. It is not difficult to foresee what would happen to them if the country were hit by another depression when people would be unable to pay premiums. Group clinics appeal primarily to employees with steady income—school teachers, municipal and similar employees. If the majority of their subscribers consisted of industrial workers who suddenly might be out of work, the clinics would necessarily collapse.

Hence, if we decide to finance medical services through insurance, the insurance system must be compulsory. It should include as large groups of the population as possible. It is a great weakness of most European systems that they are limited to the low-income groups, while we know that the provision of medical care is a serious problem for practically all brackets of the middle class. Health insurance must include not only the wage earner but his family members as well, and it should also include self-employed individuals. It must provide complete medical service, preventive, diagnostic and curative, by general practitioner, specialist, nurse, hospital, etc. People should have complete security in health matters.

Should the system be centralized or decentralized? That depends on conditions prevailing in different countries. In the United States, Senators Wagner and Murray think that the entire social insurance system should be centralized in the hands of the federal government so that the people would be guaranteed equal benefits irrespective of state lines. Our workers move about a great deal, and the experience with state insurance systems has revealed many hardships. A dam builder may be working in Tennessee one year, in Colorado the next, and thereafter in the state of Washington. If he happens to have an accident, the compensation to which he is entitled will be totally different according to the state in which he happened to be working at the time of the accident, because every state has a different compensation law. The same is true for unemployment insurance. An unemployed worker in New York receives more than twice as much compensation for a much longer period of time than one in the state of Arkansas. It was felt, therefore, that a unified federal system would increase the security of the people. I know, of course, that conditions are different in Canada and that you have to plan along provincial lines.

There is another technical question that is not easy to solve, namely,

the remuneration of the physicians. There are three ways of remunerating doctors under a health insurance scheme. One, which seems to be the most popular with doctors because it comes closest to the traditional form of payment, is the so-called fee-for-service system, according to which doctors are remunerated for every individual service according to a tariff. In my opinion this is the most unsatisfactory system because it always calls for a great amount of paper work and red tape. The physician has to itemize his bills, which in turn have to be checked by the insurance fund in order to ascertain that the services were justified. Expensive services, moreover, usually have to be especially authorized by the fund. Another source of dissatisfaction is that the fee tariffs are usually made on a unit basis and that the unit varies from month to month according to the money available in the fund. The doctor, therefore, never knows what amount he may expect for a given service.

The capitation system, under which payment from the insurance fund is made not on the basis of services rendered but of the number of patients registered with the doctor, is better because it undoubtedly greatly simplifies bookkeeping. It is, however, impossible to bring the specialist into such a system. The third, and in my opinion by far the best, method is for the funds to appoint physicians on salaries graded according to experience, responsibility, and hazard. The advantages of such a system are obvious. It eliminates a great deal of unnecessary bookkeeping, permits provision of adequate remuneration to doctors in rural and far distant districts, and guarantees the physicians an income on which they can count. I am well aware that the idea of being salaried employees does not appeal to the majority of doctors, because it is not the traditional form of remuneration. They also fear that a salaried system might reduce their initiative. The experience in other countries, however, has shown that if salaries are adequate—and there is no reason why they should not be adequate—the doctors are very soon reconciled with such a system and appreciate the security and independence it gives them. Nobody will deny that the public health services in Canada as well as in the United States have given a splendid performance with salaried doctors and that excellent medical care is given in such places as the Mayo Clinic or the Johns Hopkins Hospital where doctors are salaried also. We should furthermore keep in mind that most of the progress of medicine was achieved by salaried men, such as Pasteur, Koch, Ehrlich, Walter Reed, Welch, Flexner, Banting, to mention only a few.

Health insurance is a method to provide the funds needed for the financing of health services. What kind of services? My own personal view is that, in the future, medicine will increasingly be group medicine practiced through medical centers, for the simple reason that this is the form of medical care that can make the best use of the present technology of medicine. The people today need more than a family doctor; they need a family medical center where they will find the general practitioner, the various specialists, with all the technical equipment needed to give them preventive, diagnostic, and curative services. In the cities it should not be difficult to establish such medical centers that would serve residential districts and working places. In rural districts, particularly in countries like Canada and the states, where the population is scattered over wide areas, it would be more difficult. But I think that with the present means of transportation, with airplane and helicopter, it should be possible to bring not only general practitioners but also specialists, nurses, and other auxiliary personnel to the people of rural districts. I am particularly impressed by the great possibilities of the helicopter, which will permit one to take a patient from the top of a mountain and bring him to the operating table with a minimum of delay.

Medical services provided under a health insurance scheme will not be enough to solve the health problems of a nation. We shall still need our public health services in addition. The sanitation of dwelling places, the protection of society against epidemics, the provision of medical services to poor minority groups, and many other tasks will remain such that they will require the full state power for their execution. The two services together will promote health, prevent disease, restore and rehabilitate the patients, once prevention has broken down. Every country will have to decide on the basis of existing conditions what public health and what insurance services it wishes to have. Personally I believe that ultimately the provision of health services and medical care will become a public service, just as education already is.

Health cannot be forced upon the people. It cannot be dispensed to the people. They must want it and must be prepared to do their share and to cooperate fully in whatever health program a country develops. No bill is perfect from the very beginning. If we had to wait until we had a perfect bill that would satisfy everybody and would solve every problem at once, we would never get anywhere. A beginning must be made and must be made soon, because in war as in peace the people's health is one of the nation's most valuable assets.

DISCUSSION

QUESTION: In cases where the hospital system functions from the larger centers, it will be far more attractive for the physicians in the cities than for those in the rural districts. Would a doctor give the same service there as he would at points where conditions were far more attractive? A doctor today usually prefers a city practice.

DR. SIGERIST: I am glad you mention this point because I am particularly interested in the problem of rural medicine. I have studied rural health and medical conditions in a number of countries, in Yugoslavia, in various sections of the Soviet Union, in South Africa, and, of course, in the United States. There is no doubt that it is relatively easy to give good and complete medical care to the people in the city where specialists and all facilities are easily available, while it is much more difficult to do so in rural districts. Yet it can be done, and I have seen it done in a number of countries.

The goal, in my opinion, must be to bring the same quantity and quality of medical services to the rural population as the city people receive. It may seem ambitious and, of course, is not easy because the people are scattered. The method, I think, should be the following: We already have rural hospitals in a good many places; where there are none we must build them, not only because the people need them but also because we shall never be able to attract well-trained young physicians into rural districts unless they have the facilities of a modern hospital available that will permit them to practice scientific medicine. The hospitals should be developed into fully organized medical centers, staffed with general practitioners, specialists, laboratory technicians, etc., and such a center could be put in charge of the health work of an entire district. Physicians could be placed at strategic points of the district, which would serve as outposts of the medical center, and, where the population is not large enough to warrant the use of a doctor, a well-trained public health nurse could be put in charge of such an outpost. It seems essential to me that these medical stations, whether staffed by physicians or nurses, should be considered outposts of the district center and should be in constant touch with it. With the present means of communication and transportation, this is entirely feasible. Wide use is already made of the airplane in rural health work in northern Scotland, Australia, and Russia. The difficulty with airplanes, however, is

that they require professional pilots and landing fields, and this is why I have great hopes in the possibilities of the helicopter, which is much easier to fly and can land anywhere. With these new means of transportation, it will be possible to bring patients from remote regions to a medical center without delay for examinations, for operations, and other treatments. It will also permit specialists to tour the district and to help the outpost physicians in their work.

You may be interested to know that in the Soviet Union, where health services are entirely socialized and all physicians are salaried, the rural practitioner receives a salary that ranges from ten to twenty per cent higher than the salary of the city doctor of equal standing and experience. Why? Because the responsibility of the rural physician is greater, and because his job is so much tougher. I think this is a very justifiable procedure, and it obviously also contributes to make rural practice more attractive.

QUESTION: Could not that be tied in with the county health consulting system which is in operation in the province of Quebec?

DR. SIGERIST: Of course it could.

QUESTION: In Russia, where the doctors are on a salary basis, is there a feeling on the part of the laymen that the doctor should have a salary which is adequate to enable him to have the research material he needs and an adequate standard of living, or is there a feeling that the doctor is required to work too long hours under undesirable conditions? Do the doctors feel that they are receiving an income which compares favorably with the income available to other people in their society?

DR. SIGERIST: Salaries in Russia are determined by quantity and quality of work—by its social usefulness. The highest paid workers are the members of the Academy of Sciences because it is considered that their work is of greatest significance to the country.

Physicians' salaries are determined by experience, responsibility, and hazard. A doctor with twenty years' experience receives more than one who has been in practice for only five years. A physician who is in charge of a large medical center receives more than one who is assistant in such a center. And, as I mentioned before, the rural practitioner has a higher salary than the doctor in the city. Physicians in far remote regions, in the Arctic, in inaccessible mountain villages of central Asia, and similar places, have still higher salaries on account of the greater hazard in-

volved, and they also have longer vacations, of six or eight weeks a year instead of the four weeks to which every physician is entitled. Physicians are today among the best-paid workers, and their salaries are similar to those of engineers.

QUESTION: How many hours a day are the doctors expected to work there?

DR. SIGERIST: Before the present emergency, the working day of industrial workers, as you undoubtedly know, was not to exceed seven hours, and in certain hazardous occupations it was even shorter. The official working day of physicians was six hours. This may seem short, but it was felt that the doctor should always have time and leisure to study. The emergency created by the war obviously has changed conditions temporarily. Workers are putting in a twelve hour working day and have sacrificed their annual vacations, and the doctors there, as in every other country that is at war, are working day and night.

QUESTION: In one section of the country the medical profession is divided into two classes, those who advocate state medicine and those who advocate health insurance. Would the speaker care to enlarge on this phase of his submission?

DR. SIGERIST: Personally I believe that the general trend is toward state medicine, and that the protection and restoration of the people's health will ultimately become a public service to which people will be entitled in every country. Taxation seems a simpler and more equitable method of financing such basic services. It is only just that people with high incomes should be called upon to contribute more than the actual cost of the medical care they receive, while other people can contribute only part of the cost and people of very low incomes cannot contribute at all. The general principle must be that everybody contribute according to his ability, while all should be entitled to the best medical care that can be provided. State medicine requires a smoothly functioning, efficient, administrative machinery.

Health insurance is another method of financing medical services. It seems preferable to many people because the change is less radical and permits the preservation of some of the traditional forms of medical service. It may therefore well be considered as an intermediate step. In my opinion it is a more complicated and more cumbersome method of financing than taxation, and it will always require government subsidies

because there will always be many people who cannot contribute insurance premiums.

I think every country will have to decide what method is feasible and preferable under existing conditions. In the United States, for example, it would be impossible at the moment to introduce a complete system of state medical services covering the entire population. The people are not ready for it, nor have we developed the type of civil servant that England has and without which it would be difficult to administer such a plan. The best we can hope for today is a system of health insurance embracing large sections of the population and supplemented by government services.

The resistance against all such plans is very much the same as the one that was experienced in the field of education. For a long time education was considered a private matter of the family in which the government should not interfere. Once society realized that a democratic community cannot function as long as many of its members are illiterate, the state assumed responsibility and provided a system of free public education. The objections brought against such a plan were very much the same as those brought against state medicine today, and yet I am sure that no body would suggest that we give up our system of public education.

QUESTION: Have you been able through your surveys in the United States to arrive at any conclusion as to the average cost of medical service to the individual today?

DR. SIGERIST: The Committee on the Cost of Medical Care found that in 1929, a year of great prosperity, the people of the United States had spent \$30.08 per caput for medical care. The various group clinics operating under a voluntary prepayment plan found that they could provide medical service including hospitalization, but not including dentistry, for \$2.00 to \$2.50 a month for the individual, or \$5.00 a month for a family consisting of husband, wife, and minor children. Henry J. Kaiser provides in his shipyards complete and excellent medical services including hospitalization to his workers and found that a contribution of seven cents a day per caput, plus the money that comes in under Workmen's Compensation, not only permits the financing of the services but also pays for capital expenditures.

QUESTION: And if you were to use organizations of the type you have been discussing, would that be the general cost?

world. We had a second industrial revolution which profoundly affected the structure of society. Medicine progressed very rapidly and became highly specialized and highly technical. And yet we still maintain the pattern of medical education that was set fifty years ago. New courses have been added to the curriculum here and there, but the general pattern remains basically unchanged. I feel very strongly that we should bring the social sciences into the medical school. The physician must now, as in the past, have a thorough scientific training, but he should also be instructed in the social and economic implications of medicine. The opposition on the part of many physicians to health insurance or state medicine is very often the result of ignorance, since many physicians are completely unaware of the basic changes that have taken place in society and completely lack historical perspective. Whoever is aware of historical developments must realize that a new medical science called upon to serve a new type of society calls for new forms of medical service. My school is one of the few in the United States where students are given systematic instruction in the history, sociology, and economics of medicine.

The scope of medicine has broadened considerably, and the social causes of disease must be paid increased attention. Every patient who comes to the hospital is a reminder to us that prevention has broken down, and from every case we should try to learn what should be done to prevent such an occurrence in the future. Once an individual relationship between physician and patient, medicine is becoming today more and more a social institution, and we must instruct our students in social medicine. You probably heard that Oxford University has quite recently created a new chair of social medicine.

In our country, most states require a one year hospital internship before the young graduate in medicine may qualify for practice. In Russia, the young doctors are required to spend a period of time in rural practice as part of their general medical training. In Yugoslavia, all young doctors have to spend a year in social medical services, either in rural or in urban institutions. I think we also should provide some opportunity for our students to acquire practical experience in such fields, and I think that part of the long summer vacation could be used very profitably for such a purpose. We could, in the summer, send out groups of medical students, student nurses, etc., who would assist in government services, in Indian reservations, among the fruit pickers of California and Arizona, in poor sections of our south, etc. We know from experi-

ence that such government services are usually understaffed, so that they would welcome such assistance, and to the students such a period would be an invaluable experience. The cost should not be exorbitant. Medicine must become preventive medicine first of all and the prevention of disease should be emphasized throughout the curriculum of our schools.

QUESTION: Would you care to tell this gathering what in your opinion is the role played in the various countries by such groups as chiropractors, osteopaths, and others? Are they as a rule admitted on an equal footing with what we consider the general practitioner of medicine?

DR. SIGERIST: As a rule they are not. All health insurance systems with which I am familiar admit only duly licensed physicians to their panels. The Wagner Murray Dingell bill does not foresee the admittance of chiropractors and osteopaths.

QUESTION: Can you tell us whether in universities in other countries courses of instruction in chiropractic and osteopathy are recognized?

DR. SIGERIST: I do not know of any. They have always been considered as being incompatible with academic medicine. Medical sects or cults or whatever you may call them, usually develop when academic medicine is neglecting some field. In the beginning of our century American medicine became very scientific and neglected the psychological aspect of medicine. As a result, Christian Science and similar movements developed to fill the gap. Now that psychiatry is highly appreciated and cultivated, these other movements have stopped growing. The same happened in the field of physical therapy, which was also neglected for a while because it was not considered scientific enough. And yet the experience of centuries has demonstrated that very good results may be obtained with physical therapy, particularly in the treatment of chronic diseases. Again the gap was filled—in this case by chiropractors, naturopaths, and similar groups. The lesson to be learned is that academic medicine should incorporate whatever methods of treatment promise results.

QUESTION: I live in a section of about five thousand people. We have state medicine there, but I have discovered that many of the people who have the advantage of this still seek services from other sources. Yet you are in favor of state medicine as something to work towards?

DR. SIGERIST: I would say this: if the people seek service from other sources, it means that they are not satisfied with the services they get. In Russia, the private practice of medicine was never forbidden and, in the beginning while public services were not yet fully developed, many people preferred to go to the private practitioner. Later, when public services had improved tremendously—both in quantity and quality—private practice gradually died out because there was no reason for paying fees to a doctor when it was possible to obtain good, or even better, services free of charge. Something similar has happened in the field of education, where public and private schools are competing with each other. In many countries the private schools are still better than the public schools, but in many sections of Switzerland, the country from which I originally came, the public schools had already become far superior to private schools, which were maintained primarily for the benefit of the "dumb" children of rich parents.

It is the responsibility of a government to see to it that public services are of first-rate quality. To this end, physicians and other employees must be well paid and institutions must be so equipped that physicians can practice modern scientific medicine. As long as physicians are underpaid, the services will not attract the best type of young doctor. It is also very important for such services to have a satisfactory system of promotion, and they must be kept free of party political interference.

QUESTION: It has often been charged by those who oppose state medicine that as the private practitioner, the doctor who is going to give the service, would not become highly paid he would lack an incentive to work, with the result that he would become just a wage earner, a time-serving working man.

DR. SIGERIST: I have often heard the fear expressed that under a system of state medicine the doctor would become a mere job holder and would lose interest in his work. I do not think that this fear is justified. Members of other professions, school teachers, university professors, judges, ministers of the church, engineers, etc., are, as a rule, salaried also, and we could not say that they have lost the incentive to work. Physicians in the public health services are salaried and have done a splendid job in every country. The great improvement in health conditions is primarily due to their efforts. Under the present system, the average physician's income is not a very high one and the physicians as a whole would be better off under any organized system. Since salaries would be graded,

the material incentive would not be lacking. The experience of other countries has shown that, after a period of adjustment, physicians welcome being freed from the necessity of charging fees and collecting bills and appreciate the independence and security that such a system gives them.

TOWARDS A RENAISSANCE OF THE AMERICAN SPA



THE United States is very rich in mineral springs and other natural curative forces, and there is probably not one mineral water in Europe nor hardly a climate that could not be matched in America. The country has 2717 areas in which medicinal springs have been found, with 8826 springs. Wyoming leads with 2244 springs, next follows Texas, then Missouri, California, Colorado, New York. Of all areas explored in the country, 424 have been used commercially and 321 have been developed at some time or other as health resorts. This sounds impressive, and yet there can be no doubt that only a very few spas are actually prepared to give adequate medical service today. In recent years, however, there has been a definite movement towards a renaissance of the American spa, the manifestations of which we must now examine.

In Europe most mineral springs are publicly owned, while in this country the great majority of all spas are still privately owned and

In *When Doctors Are Patients* edited by Max Pinner and Benjamin F. Miller. New York: W. W. Norton, 1952. Dr. Sigerist described his personal illnesses, especially the hypertension which later caused his death. To help himself adjust to this disease each summer during the second World War years he spent a few weeks at the Saratoga springs in upstate New York. This experience aroused his interest in the spas of America, whose counterparts in Europe he had known well. It led him to write a number of papers on the American spa, of which this is one. The paper appeared as the third in a series of articles on American spas published in *Ciba Symposia* 8: 313-326, April-May 1946. Illustrations and some extended quotations have been deleted.

operated. And, while it is quite possible to provide good medical service in such a resort, yet there is no guarantee for its permanence. There is, however, a tendency developing for the government, federal, state, or municipal, to take over springs, and this shows that we are beginning to recognize that they are an asset for the people's health and should be carefully preserved and maintained. . . . Berkeley Springs, W. Va., was presented to the state in the eighteenth century and has been publicly owned ever since. Hot Springs, Ark., was made a national reservation in 1832 but remained undeveloped until the first bathhouse was built by the government in 1878. Treatment was free to those who took an oath that they were "without and unable to obtain means to pay for baths" and who also were "prepared to provide and pay for their own board and lodging and had a return railroad fare." The United States Public Health Service operates a clinic that gives examination and treatments to indigents, and in 1928 98,487 free baths were given, mostly to patients suffering from inveterate venereal diseases. The federal government furthermore maintains an Army and Navy General Hospital in the reservation.

Another important development was initiated when the state of New York took over the Saratoga springs. At the turn of the century the decline of Saratoga as a health resort was so great that a commercial company was exploiting the waters, pumping out 150 million gallons a year. The natural carbonic acid gas was extracted and used for the charging of various manufactured beverages. The springs ceased to flow, and the country was threatened with deprivation of some of its most valuable medicinal waters. At this critical moment the state of New York stepped in. In 1909 the legislature passed a bill enabling the state to take control of the springs, and the area with its 163 springs became a state reservation. It took seven years for the springs to return to their old level. The state decided to develop the spa, and in 1929 appointed a commission with Bernard M. Baruch as chairman "to make a comprehensive study and survey of the mineral springs at Saratoga." The commission consulted with geologists and foreign balneologists, and in cooperation with the New York Academy of Medicine it appointed a committee of physicians who "made intensive investigations both at Saratoga and at the chief resorts of Europe." The commission presented its recommendations to the legislature, the state of New York spent 8.5 million dollars, and in 1935 the new Saratoga spa was opened. When it was completed in the course of the following year, it included a group of beautiful buildings,

a hall of springs, two new bathhouses, a recreation unit, a hotel, and a bottling plant

This was splendid in that it gave the country a unique health resort with all modern facilities, a resort that could compare very favorably with some of the best European spas. But still more significant was the fact that the new development included a research institute. It was named after Dr. Simon Baruch, Bernard M. Baruch's father, a physician of vision, who long before had had such a development in mind. The creation of a balneological research institute was probably the most significant step. It was the first institute of its kind in this country in a field that had long been purely empirical. The committee of physicians in its report to the legislature of 1930 had a very broad scheme in mind when it recommended that steps be taken toward the establishment of a scientific institute at Saratoga whose functions should be to provide modern laboratory facilities for diagnostic work, with a second department devoted exclusively to research work in balneological therapy and other methods of treatment of chronic disease, and, finally, with a third department given over to the study of the geology of the district and the physical and chemical properties of the water. It further recommended that the research and experimental work as well as the educational facilities might be associated with one or more medical schools of the state. It seemed desirable to consider a plan whereby fellowships would be granted to young physicians for travel and study abroad, and to organize, at Saratoga or elsewhere, courses in balneotherapy when the opportune time would come. The clinical material for research purposes was to come from both the ordinary patients and the patients who would be accommodated free of charge or at greatly reduced costs. A rule should be adopted that no one could pursue a course of treatment at Saratoga without medical direction by physicians recognized by the management of the spa.

The foundation of the Simon Baruch Research Institute marked a date in the history of American medicine. It signified that balneology was becoming a scientific discipline in this country, as it already was in Europe. Research is the spring that feeds all medical activities and when practice is dissociated from research it soon degenerates into mere routine. Research alone would be able to overcome the ignorance of the average physician in balneotherapy that was depriving thousands of patients of such treatments. The institute, unfortunately, was never able to function on the scale on which it had been conceived. As a result of

personal disagreements, expected funds did not come forth and the institute today operates on a very limited budget. It is also handicapped by the fact that it has no clinical division. Nevertheless the mere fact that the country had established one balneological research institute in one of the country's outstanding spas was a step of symbolic value in that it opened up a new discipline of medicine.

Developments at Saratoga springs drew the attention of the medical world to the problem of our spas, and as a result a number of studies were undertaken. At the annual meeting of the American Congress of Physical Therapy held in Cincinnati in September, 1937, a committee was appointed to assemble data regarding the spas and health resorts of the United States. The committee contacted various state departments of the different states to obtain a list of places where special attention was given to the therapeutic use of natural agents such as mineral waters, muds, climate, ocean bathing, etc. The committee then sent a questionnaire to 152 resorts and received seventy replies. In 1938, at the Chicago session of the congress, it presented a report that was published in the *Archives of Physical Therapy* 20:42, 1939. The committee analyzed the causes for the decline of the American spas: economic factors, lack of interest by the physician, unfounded claims made by certain spas, lack of medical supervision, lack of efforts to keep facilities up to date.

The committee considered that a well-organized spa or climatic resort should be characterized by:

1. The presence of natural resources such as mineral water, peloids (mud or moors), or climate, which have therapeutic value.
2. Suitable physical facilities for administering of the above-mentioned natural therapeutic agents.
3. Competent medical supervision.
4. Adequate medical records and facilities for investigation.

The committee recommended this broad classification of such institutions:

I. Spas. (a) Inland (mineral waters and moors). (b) Coastal (seashore, ocean bathing).

II. Climate resorts. (a) Inland. (1) Altitude (high, low). (2) Desert. (b) Coastal. (1) Temperate. (2) Subtropical.

The committee, furthermore, felt that, in order to meet the present problems and to enable further developments, it would be necessary to:

1. Discourage the use of unfounded claims and testimonials in the printed literature.

2 Encourage proper medical supervision with clinical and laboratory studies of their natural resources and application in treating patients in order to establish sound indications

3 Encourage the presentation of established facts and sound clinical information to the medical profession. This may be accomplished by: (a) lectures on hydrotherapy, balneology, and climatology in medical schools, (b) the presentation of papers covering such subjects at medical meetings, (c) invitations to physicians to visit and inspect the individual spas and climate resorts, which occasion may be used to convey facts regarding their work.

4 Encourage the development of facilities for use of spas and climate resorts at a cost within the reach of persons with moderate means (a) The small institutions up to 100 capacity are particularly suited to provide such service because of lessened overhead expenses (b) The large institutions may provide smaller units to furnish service at moderate costs

At the same time, recognizing the value of those phases of medical treatment such as climate, thermal and mineral waters, sea water and peloids (muds)' the House of Delegates of the American Medical Association in 1938 authorized the appointment of a committee on American health resorts. The committee, like that of the Congress of Physical Therapy, sent out questionnaires, compiled a list of health resorts, and established standards for the recognition of a health resort so as to protect the public against unfounded claims.

The health resort was defined as 'an institution which gives major attention to the use of the special climatic and other natural therapeutic resources including mineral waters, peloids, etc., with which it is endowed by reason of its location.' The committee stated that, while the use of the natural resources is the prime object or purpose of the institution, other remedies may be applied as an adjunct. The committee then planned a series of papers on various phases of health resort therapy, which have been published in the *Journal of the American Medical Association* since 1943, and are still being continued. These articles have undoubtedly greatly contributed to drawing the attention of the general practitioner to the American spas, and they will ultimately be collected and published as a volume.

When World War II broke out and America was cut off from Europe, it was expected that American resorts would benefit from the situation and that patients who normally had gone abroad for treatments would

now use American spas instead. This only happened to a limited extent, because very few American spas could compare with those of Europe.

A new development set in when we entered the war, one that may prove to be of very great significance for the future. The army and navy took over hotels in a number of spas, establishing rehabilitation centers at many resorts. The Veterans Administration is contemplating the establishment of hospitals at such health resorts as Saratoga springs, N. Y., Hot Springs, Salt Lake, Utah, Hot Springs, S. D., Bay Pines, Fla., and Mineral Springs, Texas.

This development may become of profound significance in that it provides the possibility of treating thousands of patients in health resorts, using the local natural curative forces under full medical control. And since army hospitals usually have well-equipped laboratories it should be possible to accumulate a vast number of case histories of patients who have been followed up completely, clinically as well as in the laboratory. The value of these studies will depend on whether the armed forces have a sufficient number of physicians available who are trained in the methods of balneology.

Again a new development set in when Bernard M. Baruch decided to donate over one million dollars for the promotion of physical medicine. I am not sure that the term is a particularly good one because, e.g., spa treatment is a combination of physical, chemical, biological, and psychological medicine. It was very important, nevertheless, that a subject of medicine was to be developed that had been neglected in the past. A committee was appointed to survey the field, with Ray Lyman Wilbur as chairman. It began its work in 1943 and presented its report in April, 1944. It very justly realized that the chief needs for proper development were:

1. An adequate supply of physicians who can teach and use physical medicine.
2. More extensive basic and clinical research in physical medicine.
3. Proper use of physical medicine in relation to wartime rehabilitation and peacetime preparedness.

Following the recommendations of this committee, Mr. Baruch gave \$400,000 to Columbia University College of Physicians and Surgeons for the establishment of a key center of research and teaching in physical medicine. A number of other medical schools were given grants of from \$100,000 to \$250,000 for teaching and research. A subcommittee of the Baruch committee was appointed to survey the field of hydrology and

health resorts with Dr Carl R Comstock of Saratoga springs as chairman

Thus there can be no doubt that some progress has been made, and that a few promising steps have been undertaken. The future will depend on whether we continue in this direction or whether we revert to the prewar conditions once the European spas are restored and open again to American visitors. The fact that we shall have tens of thousands of veterans in need of rehabilitation for a long time to come permits us to expect that the health resorts will be maintained and facilities will even be increased. So far not more has been made than a very modest beginning, but it is encouraging to see that the various committees that have been more or less active during the past ten years have on the whole been on the right track. Summing up, we may say that a program for the sound development of the American spas must consider the following points

1 *Insistence upon the necessity of research* This has been justly emphasized by all committees, and it cannot be repeated often enough

2 *The provision of teaching facilities* has also been very justly emphasized by the various committees, and the Baruch grants will permit the training and appointment of teaching personnel in at least some of the medical schools of the country. This again will not be more than a beginning that will bear its fruit with the younger generation. In the meantime, efforts must be made to instruct the general practitioners. Postgraduate courses should be held in some of the spas. In Europe medical conventions frequently take place at health resorts and this provides an opportunity to demonstrate the medical facilities to the participants and to instruct them in their use

3 *Creation of a literature* Our literature on the science of health resorts is very poor compared with that of European countries. The Saratoga Springs Authority is publishing a series of very good pamphlets, and the scientific papers prepared by the committee on American health resorts of the American Medical Association are very welcome also. But all these publications are rather elementary, and it is obvious that we need a more elaborate literature. We have not a single book that could compare to the *Handbuch der Balneologie, medizinischen Klimatologie und Balneographie*, edited by E. Dietrich and S. Kaminer, and published in five volumes at Leipzig from 1916 to 1926. Our own balneological books are old, and the most recent survey is William Edward Fitch's *Mineral Waters of the United States and American Spas*, published in

1927. It was preceded by such books as John Bell's *On Baths and Mineral Waters*, etc., Philadelphia, 1831, and *The Mineral and Thermal Springs of the United States and Canada*, Philadelphia, 1855; John J. Moorman, *The Mineral Waters of the United States and Canada*, Baltimore, 1867; George E. Walton, *The Mineral Springs of the United States and Canada*, New York, 1873; A. N. Bell, *Climatology and Mineral Waters of the United States*, New York, 1885; and James K. Crook, *The Mineral Waters of the United States and Their Therapeutic Uses*, New York and Philadelphia, 1899. A directory of the existing health resorts with detailed descriptions of the existing natural curative factors and medical facilities, and with open criticism of defects, is urgently needed.

4. *Organization of an American balneological society*, or whatever it may be called. The few balneologists of the country have met in the past at the American Congress of Physical Therapy and at the conventions of the American Clinical and Climatological Association. Once the number of specialists increases there will undoubtedly be a need for a special forum.

5. *Organization of an American federation of health resorts*. The need for such a federation has been mentioned repeatedly. It is obvious that the resorts have many problems and interests, scientific and economic, in common. A permanent secretariat would serve as a clearing house and could become a valuable source of information for physicians and public alike. It would be a distributing agency for literature on the various spas and could supply information concerning medical facilities available and costs of treatment. Only approved health resorts would be admitted to the federation, i.e., resorts that would have met the minimum requirements of the A.M.A. or some other agency. Membership in the federation would therefore be a guarantee to the public.

6. And finally it is essential that plans be made for a broadly conceived social program that would make our health resorts available to the mass of the people and would develop them into strong centers of human conservation.

— IV —

OTHER LANDS

LEPROSY IN THE HAWAIIAN ISLANDS

LEPROSY played an exceedingly important role in the life of medieval Europe. The disease, which long had been widespread in the ancient Orient, and which existed also in classical antiquity, increased steadily in the first centuries of the Middle Ages to reach its zenith in the thirteenth century. In the fourteenth century the disease began to decline rapidly, and in the Renaissance it was practically eliminated. The problem now is to discover the causes of this decline. The decline has generally been attributed to the strict isolation measures which were enforced, following the principles laid down in Leviticus, by the church at first, and later by the state.

In order to study leprosy, I traveled to the Hawaiian Islands in January, 1932, where I was offered an opportunity to see close to 600 lepers in all stages of the disease and to observe current methods of treatment. When Hawaii was discovered in 1778 by James Cook, leprosy did not exist on the islands. Apparently the disease was brought in only toward the beginning of the nineteenth century, probably from China. Today

.....

During his first trip to America in 1932, and before he came here to live, Dr. Sigerist visited Hawaii. There he saw two leprosia, which occasioned this brief note speculating on the cause of the decline in this disease. The note was published in Switzerland in *Verhandlungen der schweizerischen naturforschenden Gesellschaft*, pp. 452-453, 1932, under the title "Der Aussatz auf den Hawaïischen Inseln." It was translated from the German by Erica Sigerist.

the natives still call leprosy *mai pake*, the Chinese disease. In 1833 the missionaries already spoke of leprosy as a spreading disease. In 1863 the government was alerted to the dangers of infection, and two years later means of prevention and treatment were begun. The sick were gathered together and forcefully isolated. A leprosarium near Honolulu, Kalihi, served as a reception center, and a leper colony was erected on the island Molokai. Both stations still function today and are under the direction of the United States Public Health Service. During my visit there were approximately 160 patients in Kalihi and about 450 on Molokai.

For the historian it is meaningful to see that isolation in itself is not very successful. Despite systematic isolation and improved treatment, the disease still exists and is receding very slowly, in fact no faster than in countries where lepers are not isolated at all. Leprosy is not very contagious. A healthy husband accompanying his leprous wife (or vice versa) very rarely catches the disease. It seems that the infection is mostly contracted in childhood and breaks out at puberty or shortly thereafter.

But isolating patients is a great danger, because the sick hide themselves, for years remaining concealed within a family and possibly infecting the younger siblings. Moreover, this must also have been the case in medieval Europe, and one can scarcely attribute the rapid decline of leprosy to isolation measures. Rather, one can suppose that the plague, which in the fourteenth century killed almost a quarter of the European population, took a great toll among the lepers who were crowded together in hospitals and were especially susceptible to other infections. In this way leprosy may have gradually died out.

SOCIALIZED MEDICINE ABROAD



WHEN we discuss various schemes of organized medical services we usually look to Europe, where health insurance has a history of over half a century. We discuss the advantages and disadvantages of the various systems functioning in Germany, England, France, or the Scandinavian countries. There are other countries, however, outside of western Europe where extremely interesting developments are taking place. I am not thinking of the Soviet Union, where conditions are totally different from any other country. It is obvious that in a socialist state medicine is completely socialized and that all medical services have become public services. Soviet medicine is developing steadily and planfully, and the only difficulty it has to face is the still existing shortage of personnel and equipment. The number of physicians has been increased considerably in the last twenty years, from 20,000 to 110,000, but many more doctors are needed to reach the last inhabitant in remote mountain valleys of this one sixth of the inhabited earth. The same is true for medical equipment; nurseries, hospitals, sanatoriums, health centers, urban and rural, have been increased quite considerably, but more of everything is needed still and the Commissariats of Public Health are engaged in a regular race with the fast-increasing birth rate of the population.

.....
Dr. Sigerist never missed an opportunity to educate medical students about world wide developments in social medicine. In this paper, written at the invitation of a national medical student journal, he made use of the assigned topic, "Socialized Medicine Abroad," to tell not about Europe but about new medical care programs in New Zealand and Chile. The paper was published in the *Journal of the Association of Medical Students*, April, 1939, pp. 116-118.

I am now thinking particularly of two non European countries whose social and economic structure is similar to ours, both of which are demonstrating that even under such conditions it is possible to organize medical services to a very large extent New Zealand and Chile

NEW ZEALAND

New Zealand has a population of one million and a half, five per cent of which are natives It is primarily an agricultural country Rich grazing land allows the exportation of wool, meat butter, cheese, and hides But the country has also gold mines, and some industries have been developed

New Zealand has always been known as a progressive country and has been looked upon as a laboratory for social experimentation When the Labor Party was put into power in 1935 by an overwhelming vote of the population, it worked out a very comprehensive social security plan which was adopted by Parliament in the summer of 1938 Under this plan, I The Government proposes to provide (1) A universal general practitioner service free to all members of the community requiring medical attention (2) Free hospital or sanatorium treatment for all (3) Free mental hospital care and treatment for the mentally afflicted (4) Free medicines (5) Free maternity treatment, including the cost of maintenance in a maternity home

II The Government further proposes that these services should be supplemented, when the organization and finances are available, by the following additional services (1) Anaesthetic (2) Laboratory and radiology (3) Specialist and consultant (4) Massage and physiotherapy (5) Transport service to and from hospital (6) Dental benefit (7) Optical benefit

III It also proposed to institute a free home nursing and domestic help service when the necessary staff has been trained to make such a proposal practicable

IV Complementary to the foregoing proposals, the Government contemplates an extended education campaign for the promotion of health and the prevention of disease

The government proposes in addition to provide invalidity, sickness and disability benefits, sustenance benefits for unemployed benefits for widowed mothers, widows, and orphans family allowances for the third and subsequent children, superannuation for miners suffering from

miner's phthisis, pensions for war veterans, and state superannuation, or in other words, old-age pensions for everybody, poor and rich, on the attainment of the age of sixty years.

The plan will be financed from three sources:

"(1). A social security contribution of 1 shilling in the pound on the wages and other income of all persons.

"(2). Continuance of the present registration fee of one pound per annum for males over 20 years of age.

"(3). Subsidy from the Consolidated Fund."

Never before has a country outside the Soviet Union conceived such a far-reaching scheme that will give complete social security to the entire population. The price to be paid for it is not too high considering the many benefits that cover almost any risk.

According to Dr. M. H. Watt, Director of Public Health of New Zealand, who was recently in this country, the general practitioner will be remunerated on a capitation basis and will receive fifteen shillings for each individual registered on his panel. Dr. Watt estimates that the general practitioner will make an average income of £1500 or \$6000 in our currency. He will receive additional compensation for mileage, midwifery, anesthesia, and similar services. Consulting specialists will be remunerated according to a fee schedule. Private practice will not be forbidden, but Dr. Watt thinks that it will die out automatically.

The government intends to put full emphasis on the prevention of disease, and to carry out a vigorous campaign in health education to enlighten the public in the promotion of health and the prevention of disease. It already has established a medical research council to promote and carry out investigations concerning the public health and the prevention and treatment of disease.

The plan was to be put into operation on April 1, 1939, but the date has been postponed. It is obvious that a scheme of such magnitude, which involves a large portion of the national income, requires careful preparation. It will be interesting, however, to watch developments in New Zealand very closely.

CHILE

Chile has a population of about five million inhabitants of which only 120,000 are Indians, so that the situation is totally different from that in Mexico. The northern part of the country is a mining region with rich deposits of nitrates and copper. The central zone is chiefly agricultural,

while the sparsely populated south is covered with forests. It is a potentially wealthy country with good possibilities of development. Like most South American republics its economy, however, was semicolonial. Its industries were largely developed by foreign capital, so that the surplus went abroad and the population remained poor. Chile is one of the most progressive and most democratic republics on the continent. Trade unionism developed since 1853 and in 1938 a People's Front, embracing all liberal elements in the country came into power. Social legislation was developed from 1924 on: regulating labor contracts, working hours, salaries, woman and child labor, arbitration, syndical organization, etc. On September 8, 1924, a bill was passed introducing sickness and invalidity insurance. Health legislation was extended by various bills in the following years so that today Chile has one of the most complete and most progressive social security legislations in the world.

Social insurance is compulsory for all persons under sixty-five years of age whose income is less than 12,000 pesos a year and whose work is more physical than intellectual. This embraces the great majority of the population, particularly since the farmers are mostly farm laborers. Other persons whose annual income is less than 12,000 pesos can join the social insurance system voluntarily provided they are Chilean citizens, less than forty-five years of age and have passed a previous health examination given by a physician of the insurance fund. The insurance system is financed through contributions of employer, employee, and state. In the case of employees working under a labor contract the employer contributes five per cent of the wage bill, the employee two per cent, and the state $1\frac{1}{2}$ per cent. Insured persons who work independently and such who are insured voluntarily contribute $4\frac{1}{2}$ per cent or $5\frac{1}{2}$ per cent of their income according to the field in which they work, and the state contributes the same amount.

The Social Insurance Fund is an independent corporation administered by a council consisting of representatives of all the groups involved, namely employers, employees and physicians. The Minister of Health is chairman of the council. A medical board consisting of physicians is responsible for the medical work and has special departments covering the various fields of activities, namely, mother and child, tuberculosis, pharmacy, sanitary inspection, dentistry, industrial medicine, and hygiene of labor.

The benefits consist of complete medical care, sickness benefits, maternity benefits, disability benefits, and old age pensions. Patients are

hospitalized in state hospitals and sanatoria, whereby the insurance fund pays the hospitals 2 pesos a day for each patient.

In the beginning physicians were remunerated on a fee for service basis, but in Chile, like everywhere, this system proved unsatisfactory as it leads to abuses and bureaucracy. And so the system was changed, and the fund began to build its own institutions and to appoint salaried physicians who serve the fund either full time or part time. Today the overwhelming majority of all Chilean physicians is either in the service of the government or of the social insurance organization. Today the fund controls not fewer than 598 medical institutions, namely, 141 health centers, 374 rural health centers, 149 rural health stations, 25 prophylactoria for the treatment of venereal diseases, 6 dispensaries, and 3 night sanatoria. One pediatrician must be available for every 500 children, one gynecologist obstetrician for every 500 women. A vigorous health campaign is carried out all over the country. Public health nurses are sent to the remotest villages where they spend at least a week at a time educating the population in matters of health. The budget of the Social Insurance Fund increased steadily. It was 95.6 million pesos for the year of 1934 to 1935 and twice as much, namely, 189.2 million pesos, for 1938 to 1939.

The capital accumulated by the Social Insurance Fund was invested so that it would serve the purposes of the organization. The fund owns and operates a central dairy in Santiago that produces under medical control all the milk required by the organization for the babies of the district. It purchased and developed a chemical factory, the Laboratorio Chile, which produces all the drugs required by the organization.

A still more progressive bill to enforce preventive medicine was passed in May, 1938, (Bill 6174). It requires periodic examination at least once a year, but more often if necessary, for all persons coming under the Social Insurance Act. The chief objective is the eradication of tuberculosis, syphilis, heart diseases, and occupational diseases. The examination must include a Wassermann test and X ray. In each case, the complete clinical history and social history must be taken and a report must be made on the working conditions of the person examined.

If in such an examination the doctors find that an individual is not sick but run down so that he needs a rest, they must as a measure to prevent disease prescribe for him either a complete vacation or a period of half-time work whereby the loss of wages is compensated for by the insurance fund. And no employee can be dismissed in such a case.

A PHYSICIAN'S IMPRESSION OF SOUTH AFRICA



ON the eve of my departure I greatly welcome the opportunity to bid farewell to my many friends in South Africa and to express my profound gratitude for the delightful hospitality extended to me all over the country during a period of more than four months. South African hospitality is famous in the world, but what I found surpassed all my expectations.

I came to this country early in August under the auspices of the South African Universities' Lectureship Committee, and now that my tour has come to an end I am justified in saying that—to the lecturer at least—this lectureship is a splendid institution which I hope will be maintained in the future. It brings a scholar from overseas to South Africa, not on a hurried tour but for several months, so that he has an ideal opportunity to visit the various sections of the country, to acquaint himself with its problems, and to make valuable and pleasant contacts with colleagues and students.

.....
In 1939, Dr. Sigerist spent four months in the Union of South Africa, lecturing on the history and sociology of medicine at the invitation of the South African universities. But he also took the opportunity to learn about South Africa's health problems and the steps taken to meet them. In a farewell radio address, given on December 11, 1939, from the Cape Town studio of the South African Broadcasting Corporation, he pays tribute to the progress being made but still does not hesitate to call for radical improvements in the health service provided for the African Negro population. The address was published in the Bulletin of the History of Medicine 8:22-27, January, 1940.

I spent five weeks in Cape Town where I gave a course of lectures at the university, and I am sure everybody will agree that no institution of learning in the world has a more beautiful site than the University of Cape Town. I then lectured to the students of Huguenot University College in Wellington and Rhodes University College in Grahamstown, whereupon I spent five weeks at the University of the Witwatersrand, where I was delighted to find a most liberal and progressive faculty and a very alert student body that is fully aware of the urgent problems of the day. In Pretoria it was my privilege to deliver a lecture under the auspices of the Ministry of Education, and my official tour ended in Natal where I addressed the Pietermaritzburg and Durban branches of Natal University College.

But this was not all. Upon invitation of the South African Medical Association I had an opportunity to meet the members of seven local branches and to discuss problems of medical economics with them. Student groups, left book clubs, and other organizations wanted me to address them, so that I actually gave forty-nine lectures instead of the originally scheduled nineteen, and I admire the patience with which you have listened to my sometimes lengthy disquisitions.

My field of research, the history and sociology of medicine, is rather unusual, and my university, Johns Hopkins, is one of the few that has a full chair and an organized department devoted to these subjects. Why should anyone, we hear, investigate the past of medicine? Is the history of medicine more than the history of human errors and failures? Did not scientific medicine begin only yesterday? A study of the past of medicine, however, has not only cultural value. It teaches us where we came from, at what point of development we stand today, and what our future tasks will be. It helps us to understand the many urgent social problems that medicine has to face. It is not enough to know about disease. We must be able to apply whatever knowledge we have for the benefit of all members of society.

When I landed in Cape Town I was rather apprehensive and was not at all sure that my studies would interest South African audiences. I was familiar with the excellent studies of Dr. Laidler on the history of South African medicine, and also with the activities of a student group in Johannesburg. But I was aware that as a whole the subject was new to South Africa. Nothing could have been more gratifying to me than to see what lively response my lectures found all over the country.

I came, however, not only to teach but also to learn. South Africa and

the United States have a great deal in common. They are both large and young countries, thinly populated, so that we have by necessity a great many problems in common. Wherever I went I visited medical institutions, such as hospitals, health centers, and laboratories, and it was a great pleasure to be able to talk to a large number of medical officers and practitioners. Since I am particularly interested in rural health problems—one of the most difficult and most urgent problems in all countries—I made motor trips through Zululand, the Transkei, and other rural sections, and the fact that I reached Cape Town without breaking my neck proves that the roads are better than their reputation. Yours is a beautiful and also a healthy country. If it were not, most of the native population would have died out long ago.

In the development of medicine of every young country three stages can be observed. In the beginning the nation is ready to accept scientific medicine but has not the institutions available to train its own doctors, so that young people desiring to enter the medical profession are obliged to study abroad. This was the case in America and, until recently, in your country also. In the second stage the country begins to develop its own schools but still has to import teachers from abroad. And in your two medical schools you still have a large number of professors who came from British universities. Speaking with my colleagues I sometimes had the impression of being not in South Africa but in Edinburgh. The third stage is reached when the country begins to produce its own physicians and medical teachers, and when the medical schools, from being merely teaching institutions, become centers of research. I was glad to see that you are gradually reaching this stage. I visited Onderstepoort, a biological research center of world reputation, founded by Sir Arnold Theiler and now so ably directed by one of your own sons, Dr. Du Toit. I also visited the Institute of Medical Research in Johannesburg, from which valuable contributions have come, and I have no doubt that research will play an increasingly important part in the universities. *The Journal of Medical Sciences*, which is well known abroad, is a vivid testimony to this. Due to the racial mixture of the population the country is full of most interesting biological and medical problems, so that South Africa presents an ideal field to the medical researcher.

This trip was particularly interesting to me since the population of the country has a social and economic structure that is totally different from that of any country I had visited in the past. It seems to me that the general health situation is determined by the fact that two million

Europeans live side by side with about eight million non Europeans whose material standard is extremely low We all know that there is a direct correlation between poverty and the incidence of illness It is no wonder, therefore that tuberculosis, venereal diseases, and malnutrition, with all their dire consequences, play havoc in the non European population It is very regrettable that vital statistics are not available for the native population But according to conservative estimates more than half of all the children born never reach the age of maturity It is to be hoped that vital statistics of the native population will be introduced in a not too distant future From what I saw in the native reserves the machinery to collect statistical data is available, so that the task should not be too difficult And since the wealth of the country is created by native labor it would be in the interests of all, not only of the health workers to have statistical figures available

Disease knows no color bar, and a sick native population is not only an economic handicap but a direct menace to the health of the Europeans It is perfectly obvious that the non Europeans are too poor to purchase medical services so that there is only one possibility to improve health conditions, namely through the development of state services I saw promising beginnings in the Transkei, where every magisterial district has a district surgeon, and where twenty rural clinics with native nurses are being established Much remains to be done, however, and it is obvious that sixty four physicians cannot possibly serve a population of 1 3 million

In the cities conditions are somewhat different The 300,000 native mine workers of the Rand are fed scientifically and have organized medical services This is a demonstration of the fact that money spent to improve health conditions pays large dividends Outside the mines, however, conditions are much less satisfactory I visited the native locations of all the cities that I touched on my tour and found them very different Some, like that of East London, are atrocious, breeding places of disease, and it is only to be hoped that conditions will be improved without waiting for the outbreak of major epidemics Others, like the new location of Port Elizabeth, are infinitely better Health services are, in most locations, quite inadequate I was struck by the fact that the native has become health conscious and hospital minded I hear that ten years ago natives had to be dragged into the hospital, while now they flock to it. Wherever I visited non European wards I found them overcrowded—a very promising sign, because it shows that the native has

confidence in scientific medicine. But it is obvious that infinitely more accommodation will have to be provided.

The health problems of the European population are somewhat easier to solve, and statistics show that health conditions of this section of the population are as good as those of most European countries. Poverty of the population, however, presents health problems in this section also. Thanks to your very well-drafted Slum Clearance Act progress is being achieved, and I was very interested to see the subeconomic housing schemes of many cities. They undoubtedly are an important step in the right direction, although they do not remedy the basic evil, low wages. In every country society should realize that there is a minimum income under which no family can lead a decent and healthy life. If this minimum is not provided by wages, somebody has to make up the balance. It may be the community, by building subeconomic houses, distributing milk, and similar measures. Or, if this is not done, illness and crime result, and the community has to pay for hospitals and jails.

One way of financing medical services is through insurance. The European mine workers, the railway workers, and those of many industries have their benefit societies. I studied the Colley report on national health insurance, and I have no doubt that such a scheme would reach groups such as the clerical workers, who so far have no organized medical services and find it difficult to budget the cost of illness. Health insurance, however, cannot be a national solution of the problem in a country in which over eight tenths of the population is too poor to pay insurance premiums. It seems to me, therefore, that the only possibility of bringing health to all the people of South Africa, irrespective of race and income, is the gradual development of public services. This is by no means a revolutionary step, because the country already has extensive state medical services. The cities have their medical officers of health, the districts their district surgeons. Free clinics are available in many places. The task would be to develop the existing organization more and more, so that it would gradually reach the whole population.

I was greatly interested in the free hospitalization scheme that is being discussed so eagerly in the Transvaal today. The hospital is playing an increasingly important part in our medical life, and if hospital service and outpatient department service become available to all free of charge this will become a tremendous step in the development of state medicine.

South African medicine has progressed enormously in a very short

period of time. You already have two flourishing medical schools, I hear that a third school will be established in Pretoria in the future. I wish you would consider a fourth school, perhaps in Durban for the training of fully qualified non-European physicians.

You already have many excellent hospitals that compare very favorably with the best hospitals of America. Your own Groote Schuur Hospital is an example, and the new hospital in Pretoria is a beautiful and splendidly equipped institution. But still more hospitals and sanatoria are needed, particularly for the non-European population.

You have an excellent medical corps, serving the people with great enthusiasm, and I particularly enjoyed my contacts with your medical officers of health, whom I found a most progressive body, fully aware of their great responsibilities. But there is no doubt that many more doctors, nurses, and other auxiliary personnel are needed if you remember that you are a nation not of two but of ten million inhabitants.

Every health program costs money and requires sacrifices from those who have the money, but there is no better investment than that in health.

I have spent a most happy time in South Africa, and I am sorry to leave your beautiful country and its hospitable people. I have been fascinated by your many problems that I shall keep in close touch with developments here, hoping that I may be able to come back for a second visit some day. Once more I wish to thank you all for the kind reception you have given me everywhere, and I am particularly grateful to the Graduate Association in Johannesburg, upon whose initiative I was invited to this country, and to the University of the Witwatersrand which has admitted me among its honorary graduates.

I want you to know that you have one more friend in the United States, who will always be glad to welcome visitors from South Africa.

THE NEED FOR AN INSTITUTE OF THE HISTORY OF MEDICINE IN INDIA

IT is no longer necessary to stress the value of studies and of academic instruction in the history of medicine. Since 1905, the year when the Leipzig Institute was founded by Karl Sudhoff, one country after another has developed similar institutions. They became cultural centers from which the field of historical studies was broadened considerably and medicine was greatly enriched.

A survey undertaken in the United States in 1937 revealed that courses in the subject were offered in fifty-four of the seventy-seven medical schools then existing.¹ It must be admitted, however, that in the majority of these schools the standard of instruction in medical history

.....
In the last years of the British rule in India, the Health Survey and Development Committee was established under Sir Joseph Bhore. In 1944, this committee decided to call on two consultants from the United States, one of whom was Dr. Sigerist. One of the outcomes of this visit to India was the paper presented here, in which Sigerist traces the ancient background of Indian medicine with its current pattern of traditional and modern medical service existing side by side. He calls not only for an institute of the history of medicine, as indicated in the title, but also for an institute of social medicine to help train Indian medical students to understand their social responsibilities. The paper was published in the *Bulletin of the History of Medicine* 17:113-126, February, 1945. It also appears in the *Report of the Health Survey and Development Committee*, vol. III, Appendixes, pp. 204-213, Simla, Government of India Press, 1946.

¹ *Bulletin of the History of Medicine* 7:627-662, 1932.

was far below their general academic standard, and that only very few of them engaged in serious research. Nevertheless, the mere fact that seventy per cent of all medical schools thought it advisable to include medical history in the curriculum shows that the significance and possibilities of the subject have been recognized.

§

In a country such as India a center of studies in the history of medicine is more necessary than anywhere else, because in India ancient and medieval medicine are still alive and are practiced on a large scale. It is no exaggeration to say that the overwhelming majority of the people of India receive medical care only from indigenous practitioners. They either follow the principles of the *Ayurveda*—the science of longevity—as it developed in the Atreya school of Brahmin doctors over two thousand years ago, or they are adepts of the *Unani*, or Greek school of medicine, which actually is Arabo-Persian Medicine—to mention only the two major systems.

The fact that indigenous medicine plays such a very important part in the life of the Indian people is frequently minimized or even ignored. And yet it represents a very tangible reality that must be faced openly whenever plans are elaborated for improving the health conditions of the country, particularly since its popularity is growing rather than diminishing. New indigenous schools are being founded. They are subsidized by the government in several provinces. The Osman University of Hyderabad has a medical college which is a *Unani* medical college. The Medical Practitioner's Act of Bombay of 1938 admits graduates of indigenous schools to the Medical Register.

At first sight it seems strange that these ancient indigenous systems are able to compete with modern scientific medicine. It was not strange in the seventeenth and eighteenth centuries when the two worlds first entered into contact. At that time European medicine was developing new theoretical foundations but in practice, in the treatment of disease, it was hardly more effective than Greek or Hindu or Arabic medicine. But today? Nobody can deny that scientific medicine during the last hundred years has made tremendous strides. Bacteriology and immunology have permitted us to combat communicable diseases most effectively and to eradicate many of them. Modern surgery is able to save thousands of human lives that would have been lost only fifty years ago. Pediatrics,

more than any other branch of medicine, is responsible for the decrease of death rates and for the greater life expectancy. The treatment of internal diseases, for a long time the stepchild of medicine, has greatly progressed also. The discovery of hormones and vitamins made it possible to attack certain diseases at the root, and in the last few years the sulfa drugs and penicillin have proved to be formidable weapons in the treatment of many formerly deadly diseases. How, then, was it possible for indigenous medical systems to survive?

The reasons are not difficult to find. India, with its nineteen university medical colleges and nineteen medical schools has produced physicians trained in scientific medicine, but not enough of them. It is impossible for 55,000 doctors to give medical care to a population of nearly 400 million, particularly since economic necessity forces the majority of doctors to practice in the cities, while ninety per cent of the people live in rural districts. The sick villager, therefore, has hardly any choice; if he wants help and advice he must have recourse to an indigenous practitioner.

There are rural dispensaries operated by the provincial or local governments, staffed with scientific doctors. These dispensaries, however, are as a rule very poorly equipped; the doctor sees hundreds of patients every day, so that he has not the time to examine the sick and to treat him individually. He can at best practice a primitive type of first aid and bottle medicine which are hardly apt to demonstrate the superiority of Western medical science. The salary of the dispensary doctor, moreover, is so miserably small, that he is forced to make a living through private practice. But the average villager is too poor to pay for his services and to purchase his imported chemical drugs. And so the sick call on the indigenous practitioner who himself is a villager, whose drugs consist of native herbs that are cheap, and whose theoretical views conform with the religious views of the patient.

The indigenous systems of medicine, both *Ayurveda* and *Unani*, are strongly philosophical in outlook, although their original character has degenerated in many ways. The theory of the three elements in one, of the four humors in the other, are attempts to visualize the organism as a microcosm and to place it into relationship with the macrocosm of the universe. Hindu philosophy, as it crystallized in the system of the tantras, looks at the human body and at the universe as a manifestation of divine substance and energy, a concept the elements of which can be traced back to Vedic traditions. The three elements, wind, bile, and

phlegm, are symbols of the aerial, fiery, and liquid forces of life energy. Throughout its history *Ayurvedic* medicine was an attempt to interpret the phenomena of life and death, of health and disease, philosophically

Unani medicine, on the other hand, through the Persian and Arabic tradition goes back to Galenic, Hippocratic, and Pythagorean views and, having passed through the filter of Avicenna, it acquired many elements of Aristotelian philosophy

Indian culture is deeply imbued with philosophy, and this is why not only illiterate villagers but highly educated men sometimes prefer the indigenous systems to scientific medicine and rise to their defense. They claim that the medicine that came from the West is too mechanical, that it is soulless, that it has no philosophy, that it is foreign to Indian thought, while the indigenous systems are deeply rooted in the religious and philosophical traditions of the country and represent one aspect of the general attitude toward nature and man.

There is another most powerful force that is backing the indigenous systems of medicine, Indian nationalism. The country is in a period of transition. After centuries of stagnation the people of India are awakening to new life and look into the future. A regular renaissance is taking place. A nation which had developed a great civilization at a time when we in the West were still savages, which for certain historical reasons too complex to be discussed here declined, is now reasserting itself.

At such a historical moment the people look back with pride to their cultural heritage. It is the common ground on which they stand. The classical literature is published in new editions. The cinema, instead of filming gangster stories, revives *Sakuntala*. Young girls dye their palms and soles with henna and re-enact old dances. The country's archaeological remains are carefully preserved, tactfully restored, and visited by thousands. Hindus and Moslems, Sikhs and Parsis, alike admire the paintings of Ajanta, the sculptures of Elefanta, the temples of Madura, and the palaces of the Mogul emperors. They justly feel, beyond communal lines, that they are theirs.

And when it comes to medicine, they remember their history also. Just as we look to Hippocrates as the father of medicine, they look to their own classics, to Caraka, Suśruta, Vāgbhata, who collected and preserved the medical lore of their time, or to the classics of Arabic and Persian medicine who in the early Middle Ages had assimilated, enriched, and systematized the Greek tradition and were far ahead of their

colleagues in the West Indians remember with pride that in the third century B C Asoka, the great Buddhist Maurya king, had provided medical services for rich and poor, for men and animals, throughout his empire, that he had hospitals built in town and country, for men and animals, at a time when there was not a single hospital in the western world

This great medical tradition is not dead. It is alive like the Vedas, the Upanisads, or the immortal Meghadūta, like the Qoran, the Bustan, and the Gulistan. It is no wonder that India, reasserting itself, is backing up its own systems of medicine.

§

So far, so good—but medicine is neither poetry nor philosophy. It is a craft, a *techné*, as the Greeks called it, with an eminently practical purpose. Its goal in every country is the same: namely, to promote the people's health, to prevent disease, to restore health when it has broken down, and whenever necessary, to rehabilitate the former patient so that he may remain a useful member of society.

The question naturally arises: have the indigenous systems succeeded in establishing a high standard of health in India? The question can be answered scientifically because health conditions can be measured and can be expressed in figures. When we consult these figures and find that in 1937 the general death rate was 22.4, the infantile mortality rate 162, and the average life expectancy only 27 years, we must conclude that health conditions are very bad in India today, infinitely worse than in countries that have universally accepted scientific medicine.

It is well known that health conditions are determined not only by the status of medicine but also by the general standard of living—which in India is extremely low. When people have not enough to eat, constantly suffer from malnutrition, and live in a poor sanitary environment they are always threatened by disease and have little resistance to offer. Scientific medicine, however, has forged weapons with which it is possible to eradicate diseases even under poor living conditions. The numerous diseases carried by water and food can be brought under control by general public health measures. The various methods of immunization permit the prevention of diseases which today still take a heavy toll of life in India, and the new methods of treatment can save thousands of human lives that would be lost otherwise. The incidence of malaria, India's

great curse, could be reduced considerably if the doctors had enough auxiliary personnel available that they could steer and guide.

If Indians take a historical attitude toward their indigenous systems of medicine, they will be justly proud in realizing what a great advance these systems represented at their time, in antiquity and the Middle Ages. They brought many effective drugs to the people, many valuable dietetic and even surgical treatments. But Indians will also realize that conditions have greatly changed. The new science that developed from the sixteenth century on created a new foundation of medicine, a new anatomy, physiology, and pathology, on the basis of which new systems of public health and of clinical medicine could be developed with infinitely more effective methods of prevention and cure. The theory of medicine, the views we have of the causes and mechanisms of disease, are not a luxury but determine our actions. The concepts of wind, bile, and phlegm or of blood, phlegm, yellow bile, and black bile represented useful working hypotheses at their time, but the new science has demonstrated that the actions attributed to them are the result of speculation and do not correspond to a reality, while it is possible to explain the phenomena of health and disease with concepts of biology, physics, and chemistry in an infinitely more satisfactory way, one that permits testing in experiments and has led to brilliant practical results.

Indians, therefore, who have the welfare of their people at heart, who want them to live without being constantly fettered by the bonds of disease, cannot but accept scientific medicine and work to promote it and to see it applied on a nationwide scale so that it may reach every single village. It, of course, is not easy to apply modern science to one field of human endeavor while other basic functions of social life, such as agriculture and industry, remain medieval and women are kept in *purdah*. And this raises the question: is it at all desirable for a nation to accept science and technology, or would it be better for the people to remain static, to live poor and contented, bearing sufferings with resignation, leading a contemplative life, and hoping for a better lot in the hereafter? The question seems justified in view of the evil use that has been made of science in recent years. It is futile, however, because there is no choice. No nation can expect to survive in the present world as a nation unless it accepts science with all its implications. And science in itself is neither good nor evil. It is an instrument in the hands of man, and it is he who is good or evil.

India, after centuries of stagnation, is awake today and has expressed

its determination to free the people from age-old bonds. Thousands of young men and women are flocking to the universities; hundreds of them travel abroad for postgraduate study. Already India has produced physicists, chemists, and biologists of world renown. Industries are being developed. The great rivers, dammed by engineering skill, will produce water for irrigation and power for new industries that will absorb the rural surplus population. India possesses the manpower and natural resources needed to make it a prosperous country in which the people will be free to produce new cultural values as they did in the past. This may seem Utopian in view of the many traditional barriers of caste and religious taboos that tend to divide the people, but the example of other countries has shown that, however rigid the traditional superstructure may appear, it breaks down very rapidly where there is a strong popular movement that attacks the basic elements of economic and social life.

In the same way scientific medicine must be developed. Promising beginnings have already been made, and plans are elaborated for the future. The line to be taken is clear. The country needs more and better-trained personnel: researchers, teachers, doctors, and legions of auxiliary personnel. It needs more and better equipment. And it needs first of all a system of health services that will make full use of the personnel and equipment available and will bring it into the reach of everybody.

Scientifically trained doctors will gradually replace the indigenous practitioners. The argument that indigenous medicine is cheaper will no longer hold, because medicine will not be a service that is sold to the people in the open market but a public service to which they are entitled, one that is financed on public funds. Similarly the argument that indigenous drugs must be preserved because they are within the financial means of the villager will vanish, because drugs will not be sold but distributed to those who need them, and the development of a state-owned and -operated pharmaceutical industry will considerably reduce the cost of production of modern scientific drugs.

Such a development will obviously take a long time, and meanwhile the country will continue to have tens of thousands of indigenous practitioners, registered and nonregistered, trained in schools and trained through apprenticeship. It would be worth-while to study whether these practitioners could not be used during the period of transition as auxiliary personnel. In some of their schools students are given a sprinkling of scientific medicine, and, while it is obviously impossible to combine modern medical science with ancient and medieval theories, it

should be possible to train these students for a few specific functions such as the combatting of malaria, vaccination and other immunizations, the supervision of wells and latrines, and other public health measures.

§

It seems to me that in such a period of transition an institute of the history of medicine could play a very important part.

The government of India plans to establish a national medical college, a model medical college that would become a national center of medical research and a training ground for highly qualified physicians, specialists, and academic teachers. This undoubtedly is an excellent plan that will give a tremendous stimulus to the development of medicine in India and will raise the standard of medical education and consequently of practice.

The opportunity of creating a new school is one that occurs very rarely and presents great opportunities that should not be missed. It is extremely difficult to modernize an old school that is burdened with the weight of a great tradition. A business enterprise that does not keep abreast of the time soon collapses, but outmoded universities may carry on indefinitely, much to the detriment of the country.

Whoever founds a new medical college today must be fully aware of the changes that have occurred in medicine and society and of the social and economic structure into which the products of the college, the physicians, will have to fit. It would be a mistake therefore merely to copy a British or American pattern. When the Johns Hopkins School of Medicine was opened in Baltimore in 1893 it was neither a replica of a British, French, or German school. It had taken over elements of the various European systems but had blended them to form a new pattern that was in many ways better than the existing ones, and this is one reason why the school became so influential.

India is neither Britain nor America. It is a tropical country, and its social and economic structure is totally different. And, while the medical science in which students are instructed is basically the same all over the world, the application of this science varies a great deal. In small countries, such as Switzerland or Holland, the problem of rural medicine hardly exists because cities are never far away and hospitals and specialists can be reached easily. In tomorrow's India the great majority of all doctors must be scientifically well-trained physicians prepared to practice in rural districts among poor people under an organized system of

medical services. But they will have to be more than mere therapists, they will have to be teachers and social workers, leaders and friends of the people, leading them to a healthier and happier life. An institute of social medicine should, therefore, be considered.

The new college, I am well aware, intends to be primarily a center of research and a training ground for specialists and teachers. It is just for that reason that it should emphasize the social aspects of medicine. Research is needed not only in the science but also in the sociology of medicine—and in India perhaps more than anywhere else. It is a fallacy to believe that the application of scientific results takes care of itself. It does not, as we have found in every country, and the most brilliant discoveries are wasted unless they can be applied on a mass scale. The teachers who will come from this college, on the other hand, no matter whether they are physiologists or surgeons, should all carry that social outlook into whatever colleges they may be called. The national college will set a new pattern of medical education in India, one that undoubtedly will be followed by the other schools.

Similarly, since India is confronted with the problem of indigenous medical systems and will be so for a long time, an institute of the history of medicine could greatly help to clarify the situation, and I should like to outline briefly what I would consider the major tasks of such an institute.

The history of medicine is both history and medicine. It is a historical discipline like the history of art or the history of philosophy. It helps to give us a more complete picture of the history of civilization, because it is obviously not unimportant to know what diseases affected the people in the past, what they did to protect and restore their health, and what thoughts guided their action.

But the history of medicine is also medicine. By analyzing developments and trends it permits us to understand a situation more clearly and to act more intelligently. We all know that success or failure of our medical work depends not only on the scientific knowledge we possess but also on a great variety of other nonmedical factors, on economic, social, religious, philosophical, political factors, that are the result of historical developments. Unless we are aware of them and understand them many of our efforts will be wasted.

An institute of the history of medicine in India will devote its researches primarily to the history of Indian medicine and of medicine in India from the Vedic period to our days. It will investigate the medical

heritage of the country dispassionately and critically, not in order to prove a point. It will endeavor to reconstruct and envisage the medical past of India from the perspective of history, in relation to and as part of the general civilization of the various periods.

In order to be able to write history the historian must first proceed by analytically investigating and interpreting historical sources which in many cases have to be made available first. The chief medicohistorical sources are texts, and the Indian medical literature still requires a great deal of purely philological work. Many texts still have to be edited critically, and many have to be translated. One of the most important Sanskrit medical classics, Vāgbhata's *Astangahrdayasamhita*, was translated only a few years ago. I am convinced that there are still many medical texts buried in manuscripts that have not yet been touched. Our Johns Hopkins Institute possesses a collection of Sinhalese medical manuscripts written on palm leaves that have not been edited and therefore have obviously never been translated or evaluated.

The study of texts will not be limited to books written in Sanskrit, Prakrit, or Pali but will be extended to Arabic and Persian books and to those written in vernacular languages. Sources of medical history, however, are not only medical books. Other books, religious, theological, philosophical, and histories, biographies, memoirs, etc., may contain valuable information concerning health and medical conditions at a given time. It will, therefore, be necessary to canvass the entire Indian literature for medical data. Dr. D. V. S. Reddy of Andhra Medical College in Vizagapatam has shown how the Rock Edicts of Aśoka are a rich source for our knowledge of medical conditions at the height of the Maurya empire. There can be no doubt that such books as the *Ain-i-Akbari* and the autobiographies of the Mogul emperors contain a great deal that is of medical interest.

Books, however, are not the only sources of medical history. The antiquities, sculptures, paintings, buildings, instruments, and other objects of archaeological research may be able to shed light on health and medical conditions and must therefore be consulted. The elaborate bathing facilities in Mogul palaces were a luxury, to be sure, but also had hygienic consequences, and it mattered a great deal what kind of drinking water people had available and how they disposed of their sewage.

In a country like India, where traditions have persisted tenaciously through the centuries and where the Middle Ages are still alive in many

ways, the medical folklore is another rich historical source that must be consulted. This, however, must be done cautiously and critically because folklore always is a big hodgepodge in which ancient, medieval, and modern views are inextricably mixed.

The institute will not limit its studies to India because India was never isolated from the rest of the world. The Aryan conquerors came from the northwest and brought views and concepts that belonged to the common stock of all Indo-European races. Babylonian civilization radiated far over Asia, and India had intercourse with China at an early date. The caravan was a factor that greatly contributed to the spreading of stories, ideas, knowledge, and skills all over the continent. Invading armies invariably had surgeons who brought knowledge to foreign lands and learned from them. The influence of Alexander the Great's campaign is reflected not only in the sculptures of Gandhara but in many ways, and Indian drugs were sold in Alexandria. The close relations of India with the Islamic world need not be emphasized here, and from the sixteenth century on India had interrelationships with Europe. The institute therefore will study the history of Indian medicine as part of the universal history of medicine.

The critical evaluation of historical sources permits us to reconstruct the past. In the case of medicine it permits us to ascertain—if sufficient sources are available—what diseases afflicted the people in various periods, how their lives were affected by them, what they did to maintain and restore their health, and what thoughts were guiding their actions.

The history of medicine differs basically from most other historical disciplines that examine happenings and phenomena which occurred once, because it is the history of a craft, of techniques, and skills. We therefore want to know not only what people did in the past to maintain and restore their health, but also whether they did a good job or not, whether their treatments were effective or not. This is why historians of medicine must not only be historians but physicians as well. Ancient treatments can be repeated; the efficacy of drugs can be tested in experiments.

The institute will therefore investigate the indigenous medical systems not only for their ideological content, not only as aspects of India's ancient and medieval civilizations and as end products of a long development, it will also endeavor to evaluate their practical achievements. This obviously does not mean that the historical institute should have a laboratory for the testing of drugs. Certainly not, but the historian of

medicine on the basis of his studies of the classical literature and of field work would be able to point out which treatments and drugs should be tested by the pharmacologists and clinicians of the college. This would permit us to preserve and to incorporate into our scientific system of medicine whatever is found to be of value in the indigenous systems. And it would also permit the objective refutation of claims that are not justified.

Thus the institute, besides being a humanistic center, would also have some practical functions that could be extended in many directions. A physician can cure an individual case of syphilis without any knowledge of history, but whoever plans a campaign against venereal diseases must take a great many nonmedical factors into account and will be confronted with social, economic, and religious conditions that are the result of historical developments of which he should be aware. Health education is wasted unless it is somehow combined with education in citizenship, which is impossible without history. I should think that at the present moment, when India is planning to develop its medical services and to bring health to the villages, the cooperation of a physician who can think in terms of history should be extremely valuable. And the institute, by collaborating with the departments of social medicine, hygiene, and public health, should be able to make important contributions.

§

There is another field in which the institute of the history of medicine as a department of a national medical college could render great services: the field of education. It could greatly enrich the curriculum.

Whenever a country adopts scientific medicine, it usually does it with great enthusiasm and is inclined to throw everything overboard that is not science. The result is that physicians are produced who are highly trained technicians without any education, high-grade specialists who see only one small section of medicine and have lost sight of the goal. Medicine is not a natural but a social science. Its target is to keep men adjusted to their social and physical environment as useful members of society and to readjust them when prevention has broken down. Methods of the natural sciences have to be applied to this end, but the goal is social and the physician should always keep this broad purpose in view.

If I am correctly informed, the general education of the average medical student in India—as in many other countries—is rather scanty. From

the moment he leaves the secondary school his training is along scientific lines. He has the added handicap that he is instructed in a foreign language—by necessity in view of the diversity of Indian languages. He may be familiar with English literature from Chaucer to Kipling and hardly know his own classics. I met Indians who admitted that they would find it difficult to deliver a lecture in their own Urdu or Bengali or whatever their mother tongue may have been. This peculiar situation obviously tends to divorce the small educated upper class from the mass of the people. But if there is one profession that must be close to the people it certainly is the medical profession, because the doctor must not only be a therapist but a teacher and friend of the people he serves.

Instruction in medical history, if properly conducted, could greatly contribute to the training of an educated physician. It would teach the student history, the history of his own country, but also the history of the world, with a bias on medicine that would bring the subject much closer to him. It would teach him to look at modern medicine from the perspective of history and to see it in all its economic, social, religious, and philosophic implications, as the result of a long development, as a dynamic process. He would soon find that scientific medicine has a philosophy also. We too look at the human body as a microcosm in the midst of the macrocosm. The same elements that constitute the organism are found in the outside world, and the same physiocochemical forces are acting in both. The physician thus trained would have a much clearer idea of the task of medicine and of the part he is called upon to play in society.

Such instruction would also help to develop the spirit that must animate the physician in his work. He must realize that medicine is not a means of becoming rich but a service to the people. The same splendid spirit that drove an elite of medical students to volunteer their services during the recent Bengal famine must permeate the entire medical corps at all times. Only in such a way will it be possible to carry out an ambitious program and to bring health to the villages.

The Johns Hopkins School of Medicine is often looked upon as the example of a school that succeeded in creating a new pattern of medical education in its country by raising entrance requirements and emphasizing scientific instruction in the laboratory and at the bedside of patients. This is correct, but one should also remember that the men who made the school famous were not only great scientists but humanists also. Osler, Welch, Kelly, Halsted were keenly interested in the history of

medicine and never missed an opportunity to impart historical knowledge to their students. In 1890, one year after the opening of the hospital, three years before the school opened its doors, they founded the Johns Hopkins Medical History Club which is today in the fifty fifth year of its activities. Osler's historical and philosophical essays will remain a source of inspiration long after his scientific papers and his textbook are forgotten. When the school was opened in 1893 the new curriculum included a course in the history of medicine that was given by John Billings, one of the great pioneers of American medicine, who drew up the plans for the Hopkins hospital and was largely responsible for the new curriculum. And at the end of his career William Welch, in 1929, created the Johns Hopkins Institute of the History of Medicine, the first of its kind in the United States. I think these facts are highly significant and provide food for reflection.

§

After all that has been said, it is easily apparent what the structure of such an institute must be. It will require personnel and equipment. Since it will not be possible to find a physician well trained in methods of historical research who masters equally well Sanskrit, Greek, Arabic, and Persian, the institute will need a staff of at least three scholars who will work as a cooperative group. One of them, a student of Sanskrit and other Indian languages, will specialize on Hindu medicine. The second will devote his researches primarily to the Moslem phase of Indian medicine and will therefore be an expert in Arabic and Persian medicine, while the third will be a general medical historian and will study the history of western medicine in its relations with the East and the rise of scientific medicine.

The staff will require tools for research, that is, collections, and among them primarily a collection of books. The library of the institute will include the basic medicohistorical literature—books and journals—medical texts in the best editions and translations available, and as many reference books as possible. It should also include a number of nonmedical books, such as basic books on political, social, and economic history, the history of philosophy, religion, and other disciplines, books that are constantly needed for general orientation.

The institute will in addition collect other documents pertaining to the medical history of India, manuscripts, photographs, portraits, objects

such as instruments, etc., and it may consider the creation of a museum of indigenous drugs.

Whoever organizes such an institute today must endeavor to relieve the research and teaching staff of administrative burdens as much as possible. University administration is in many countries the most wasteful and cumbersome of all administrations in that it uses highly trained scientists and scholars for the solution of petty administrative problems that could be handled by general office workers just as well if not better, and this greatly reduces the efficiency of a faculty. The national medical college will obviously have a strong medical library, and it would be advisable to build the institute of the history of medicine in connection with or as an annex to the library, so that the technical administration of the institute could be handled by special employees of the library. This would permit the staff of the institute to devote all their efforts to research and the teaching of students.

This is not the place to discuss matters of budget, but there can be no doubt that the cost of erecting and operating such an institute would be much smaller than that of any other department of the college. And the returns could be immeasurably great, to the college and to the country.

the United States, and I sincerely hope that he will be given a warm reception in spite of his very dark skin.

I am glad to say that the driving force of the Bhore committee is an American, Dr. J. B. Grant of the International Health Division of the Rockefeller Foundation. Formerly Professor of Public Health at the Peiping Union Medical College, he is now Director of the All-India School of Hygiene and Public Health in Calcutta, where he does a superb job. He is equally liked by British and Indians and has their full confidence. He is a brilliant public health man of wide experience, an excellent teacher and administrator, who very tactfully succeeded in inspiring and steering the committee. The best and most progressive recommendations of the committee are his. He is leaving India and will be back in the states in the spring of 1945. If a school of hygiene could secure his services, he certainly would be an invaluable asset to such an institution. . . .

THE TOUR

In every city we visited hospitals and dispensaries, medical colleges and schools, research institutions, factories and slums, public health institutions. We had interviews with the health authorities, the faculties and students of colleges, medical practitioners and scientists, midwives and indigenous practitioners, factory owners and trade unionists. From every city we drove to the villages in order to study rural health conditions. . . .

THE MEDICAL SITUATION

The health and medical situation of India is so complex that it is impossible to discuss it in such a brief report, and I shall mention only a few of the many problems that we had to face.

The health situation is determined primarily by the following factors:

1. Low educational standard of the population (over ninety per cent illiteracy), combined with endless religious taboos. The lack of electricity in the villages prevents the use of radio and movie for educational purposes.
2. Poverty of the mass of the people in the midst of great potential wealth. The per capita annual income is estimated as from 40 to 80 rupees. It can hardly be more than the equivalent of about \$20.

3. An antiquated system of agricultural production and rural taxation that has been deteriorating steadily during the last hundred years. The result is increased poverty, shortage of food with incidental famines, chronic malnutrition that saps the vitality of the people.

4. Wide prevalence of preventable diseases (malaria, smallpox, cholera, plague, dysentery, filariasis, hookworm, etc.) that kill millions of people and disable other millions.

5. Great shortage of medical personnel: 42,000, according to the estimates 55,000, physicians for close to 400 million people. The great majority of physicians are only licentiates, trained in a four year course in, usually, very poor schools.

Less than one trained nurse per hospital

The British failed to give prestige to their own medical personnel. A top-ranking British officer of the I.M.S. ranks lower than a judge. The British matron of a large hospital is not a gazetted officer. It is no wonder that these professions are not particularly attractive to Indians. The saying goes that if a girl is pretty you should marry her, if she is not pretty but clever make her a school teacher, and if she is neither pretty nor clever make her a nurse.

Medical colleges with few exceptions are very poor. Professors are underpaid and have to make a living through private practice. In many provinces the selection of students is on a communal basis. Thus, in Madras in one of the best schools, five hundred students apply every year and two hundred are admitted. The selection is made by a clerk because it is a simple mathematical problem: there is a quota for men and women, one for Hindus and Moslems, one for every caste among the Hindus, and one for the five languages of the region. The result of this poor selection is a tremendous number of failures in the examinations.

6. Great shortage of medical equipment. The general hospital beds are only 6,683 per 296 million, the population of British India, and hospitals are badly distributed. Tuberculosis sanatoria are almost non-existent, and mental hospitals are few and of the most primitive type.

There are quite a number of rural dispensaries, but they are hardly more than primitive first-aid stations in which a doctor is wasted. He often sees two to four hundred patients a day, which permits only the primitive type of bottle medicine.

7. Lack of an organized system of medical care. Ninety per cent of the population lives in villages and can be reached medically only if there is a system that will attract doctors to rural districts and will permit

them to make a decent living and to practice scientific medicine. At present, medical graduates remain in the cities, where there is a wild and often sordid competition among them.

8 As a result of the shortage of personnel and equipment and the lack of an organized system of medical services, the overwhelming majority of the Indian population seeks medical care from indigenous practitioners, a fact to which not sufficient attention is being paid. There are two types of indigenous practitioners, those trained through apprenticeship and those trained in schools, some of which are supported by the provincial governments. The Bombay Medical Practitioners Act of 1938 foresees the registration of such practitioners. There are two major systems (besides many minor ones), the *Ayurvedic* system, the classical literature of which was written in the beginning of our era, and the *Unani* or Greek system which is actually Arabo-Persian medicine that came to India with the Moguls. Being familiar with these systems, I made a special study of the problem, visited indigenous schools, interviewed *acharyas* and *hakims*, and my recommendations in the matter were accepted by the Bhole committee. It would be a great mistake to fight these practitioners because it would immediately create a strong group with vested interests backed by powerful political forces. The task must rather be to replace them gradually with scientific doctors. And in the meantime it is necessary to study these systems historically—the best way to refute some of their pretensions or to assimilate what is good in them. For this reason I recommended the creation of an institute of the history of medicine in one of the leading universities.

PLANNING FOR HEALTH

It is quite obvious that a health plan for India can hold a promise of success only if it is an integral part of a general economic and social plan. I used to say that the electrification of the country must be the backbone of any health program. Indeed electrification would provide water for irrigation and therefore more food and a higher income for the rural population. It would provide power for the development of industries that could absorb the rural surplus population and create wealth. Electricity would bring loudspeakers to the villages that could be used for educational purposes. A rising material and cultural standard would decrease the death rate and also the birth rate. At present the death rate is dropping, although very slowly, but it is reduced artificially

through public health measures imposed from outside on the people and not because their standard of living has risen. The high birth rate therefore has not been affected, and as a result the population is increasing today more than ever before.

If India ever wishes to become independent, the country must be industrialized without foreign capital, or with a minimum of it. Industrialization with foreign capital would keep the country in bondage, and it could never hope to attain more than the semicolonial status of a South American republic. There is today plenty of capital in India. It is not invested but hoarded and therefore is dead. If a poor villager succeeds in saving some money, he buys silver ornaments for his wife and sells them when he needs cash. And the maharaja proverbially hoards gold and jewelry. If a national movement succeeded in mobilizing these hoards, much capital would come forth. The country, moreover, is rich in water power and mineral resources, and has an unlimited supply of manpower. Recent historical developments have shown that where these conditions prevail much can be achieved with very little gold.

At the moment many postwar plans are elaborated in India, by the central and provincial governments, by such enterprising industrialists as Tata, by individual statesmen, and others. Most of these plans are futile. The machinery for scientific, economic, and cultural planning is nonexistent, and besides the present political conditions are such that a comprehensive plan could not be put into action.

A health plan that would foresee definite measures at a definite time and would be an integral part of a national socioeconomic plan is, therefore, impossible at the moment. That does not mean that no action should be taken. Something can be done without delay to improve the health situation, and it is very important that an agreement be reached as to general principles and policies. The report that the Bhore committee will present in April, 1945, and that we have discussed in great detail contains a sound program.

The major tasks that may be fulfilled at the moment or soon after the war are the following:

- 1 Reorganization of health administration, separation of civilian and military administration, unification of the administration of public health and of medical services, centralized direction and decentralized activities, federal grants to the provinces.

- 2 Improvements in sanitation in cities and villages.

- 3 Everybody agrees that the rural population (ninety per cent of the

total population) can be reached only through a system of state medical services, with salaried doctors, financed from public funds. In view of the shortage in personnel and equipment and the limited funds available, developments will be slow. As an initial step, demonstration areas of approximately 3 million population each will be supplied with primary and secondary health centers, district hospitals, etc., a system that follows very closely the Russian pattern.

4. The Bhore committee recommends that a system of compulsory health insurance be created for industrial workers, and the recommendation will in all probability be accepted by the government. It has the support of the Trade Union Congress. Dr. Mountin and I disagreed in the matter. He felt that health insurance was an unnecessary detour and that industrial workers should have the same state medical services as the farmers. I, on the other hand, supported the recommendations, because I think that it is very important to create a comprehensive health service for industrial workers without delay, now, in the beginning of industrialization. It will take many years before a universal tax-supported health program can be operated, whereas health insurance could be made to function within a few weeks and would apply automatically to new industries.

5. More and better-trained medical personnel of all categories is urgently needed. The Indians speak lightheartedly of increasing the number of doctors by 300,000 and forget that it took the U.S.S.R. twenty-five years to increase their number of physicians by 120,000. The steps foreseen are:

a. Upgrading of the medical schools to medical colleges so that all medical students will graduate as M.B., B.S.

b. Creation in New Delhi of an "Indian Johns Hopkins"—the term commonly used—that is, a model medical college destined to play in India the part that our Johns Hopkins played in America. It is to be staffed and financed lavishly, and it is hoped that out of this school will come the professors needed for the reorganization of the other schools and for the staffing of new schools. General Hance, whose brain child this is, hopes that the national medical college will be functioning five years from now. In the meantime a large number of physicians will be sent abroad for postgraduate training in the various branches of medicine.

c. The great killers of India, malaria, smallpox, cholera, plague, could be eradicated without physicians, by using large numbers of

vaccinators, sanitary inspectors, disinfectors, home visitors, and other auxiliary personnel. When physicians are scarce they should not be wasted, and we emphasized over and over again the need for immediate training of such personnel.

THE POLITICAL SITUATION

The Bhore committee will present its report in April. Whether it will merely be left on file or whether it will be followed by action and how much of it will be actually applied will depend ultimately on the political situation of the country. I must therefore mention it briefly, although I have nothing to say on the subject that is not generally known.

The impression one gets traveling through the country and talking to many people is that the British government still has a strong grip on the country and is not ready to give it up. A conversation I had with an English businessman in Lahore was quite enlightening. In order to sound him out I made the remark that in the future India might not be very profitable to Britain. He immediately contradicted me, and his argumentation ran along the following line:

We did all we could to prevent the industrialization of India and to keep it a colonial country. We realize now that we cannot stop a development that is bound to come, but at least we want to reap the final harvest. If India is to be industrialized it must be with our capital, our engineers, and our machines, and not with those of other countries.

The Director of the Haffkine Institute in Bombay, Dr. Sokhey, a brilliant Indian scientist and highly cultured man, told me that his institute had begun to produce sulfa drugs that would have been much cheaper than the imported ones, but that the government had immediately forbidden it so as to keep the market open for British firms.

In several hospitals I was told that they wanted to buy American instruments, apparatus, and drugs, but that it was very difficult. Every year they had to submit to the government a list of supplies that they would need during the year. The list would go to England, and they would be permitted to purchase in foreign countries only what could not be supplied from England. . . .

The political situation of India seems confused and static at the moment, but we may expect great events when Gandhi dies and when two million soldiers return from the war.

I think it is not correct to assume that the Indian masses are apathetic.

total population) can be reached only through a system of state medical services, with salaried doctors, financed from public funds. In view of the shortage in personnel and equipment and the limited funds available, developments will be slow. As an initial step, demonstration areas of approximately 3 million population each will be supplied with primary and secondary health centers, district hospitals, etc., a system that follows very closely the Russian pattern.

4. The Bhore committee recommends that a system of compulsory health insurance be created for industrial workers, and the recommendation will in all probability be accepted by the government. It has the support of the Trade Union Congress. Dr. Mountin and I disagreed in the matter. He felt that health insurance was an unnecessary detour and that industrial workers should have the same state medical services as the farmers. I, on the other hand, supported the recommendations, because I think that it is very important to create a comprehensive health service for industrial workers without delay, now, in the beginning of industrialization. It will take many years before a universal tax-supported health program can be operated, whereas health insurance could be made to function within a few weeks and would apply automatically to new industries.

5. More and better-trained medical personnel of all categories is urgently needed. The Indians speak lightheartedly of increasing the number of doctors by 300,000 and forget that it took the U.S.S.R. twenty-five years to increase their number of physicians by 120,000. The steps foreseen are:

a. Upgrading of the medical schools to medical colleges so that all medical students will graduate as M.B., B.S.

b. Creation in New Delhi of an "Indian Johns Hopkins"—the term commonly used—that is, a model medical college destined to play in India the part that our Johns Hopkins played in America. It is to be staffed and financed lavishly, and it is hoped that out of this school will come the professors needed for the reorganization of the other schools and for the staffing of new schools. General Hance, whose brain child this is, hopes that the national medical college will be functioning five years from now. In the meantime a large number of physicians will be sent abroad for postgraduate training in the various branches of medicine.

c. The great killers of India, malaria, smallpox, cholera, plague, could be eradicated without physicians, by using large numbers of

vaccinators, sanitary inspectors, disinfectors, home visitors, and other auxiliary personnel. When physicians are scarce they should not be wasted, and we emphasized over and over again the need for immediate training of such personnel.

THE POLITICAL SITUATION

The Bore committee will present its report in April. Whether it will merely be left on file or whether it will be followed by action and how much of it will be actually applied will depend ultimately on the political situation of the country. I must therefore mention it briefly, although I have nothing to say on the subject that is not generally known.

The impression one gets traveling through the country and talking to many people is that the British government still has a strong grip on the country and is not ready to give it up. A conversation I had with an English businessman in Lahore was quite enlightening. In order to sound him out I made the remark that in the future India might not be very profitable to Britain. He immediately contradicted me, and his argumentation ran along the following line:

We did all we could to prevent the industrialization of India and to keep it a colonial country. We realize now that we cannot stop a development that is bound to come, but at least we want to reap the final harvest. If India is to be industrialized it must be with our capital, our engineers, and our machines, and not with those of other countries.

The Director of the Haffkine Institute in Bombay, Dr. Sokhey, a brilliant Indian scientist and highly cultured man, told me that his institute had begun to produce sulfa drugs that would have been much cheaper than the imported ones, but that the government had immediately forbidden it so as to keep the market open for British firms.

In several hospitals I was told that they wanted to buy American instruments, apparatus, and drugs, but that it was very difficult. Every year they had to submit to the government a list of supplies that they would need during the year. The list would go to England, and they would be permitted to purchase in foreign countries only what could not be supplied from England. . . .

The political situation of India seems confused and static at the moment, but we may expect great events when Gandhi dies and when two million soldiers return from the war.

I think it is not correct to assume that the Indian masses are apathetic,

paralyzed by the doctrine of Karma and the many religious taboos, so that they will never be able to take any concerted action. The Indian masses are poor and illiterate, and the daily struggle to feed the family makes the individual selfish. I think, however, that events in Russia and Turkey have demonstrated that the religious superstructure is not as solid as is commonly assumed, that it may collapse very rapidly under the impact of a national revolution, and that an awakening of the masses is a possibility in India also. . . .



SPECIAL TOPICS

PROBLEMS OF HISTORICAL-GEOGRAPHICAL PATHOLOGY



THE historical and geographical approach to problems of pathology has a very long history. The development of a disease in time and space was studied very carefully by ancient medical writers. Up to the nineteenth century, the history of disease, like the history of medicine, was not an historical subject treated by historians but a subject of actual living medicine. The ancient medical literature was still fully alive. Whoever investigated a medical problem was not satisfied with a study of the literature on the subject of the last five or ten years, as is common today. He went through the whole literature, from Hippocrates to his own time, and felt bound to discuss all the theories he could find. A very good example is afforded in Haller's *Elementa Physiologiae* (1757-1766) which were meant as a modern textbook, and yet represent the most complete history of physiological problems at the same time. When-

.....

In this, one of the first papers Dr Sigerist published in America, he explores the importance of studies in both the history and geography of specific diseases. His interest is not so much in the acquisition of knowledge by physicians about specific diseases—the focus of most medical historians—but in the mode of occurrence and trends of disease in time and space. Today we speak of this field of inquiry as epidemiology. Fifteen years after this paper appeared, a multivolume *Global Epidemiology* was published in the United States. The paper was published in the *Bulletin of the Institute of the History of Medicine* 10 18, January, 1933. This was the first number of the bulletin, which was started under Dr. Sigerist's editorship.

ever a medical man investigated and described a disease, he always gave an historical summary, which was not a mere introduction but an integral part of the book. It is not by accident that even in the nineteenth century the two men who made the greatest contribution to our knowledge of diphtheria—Bretonneau and Lœffler—felt the necessity of tracing the history of the disease. Both gave us, in fact, valuable histories of diphtheria.

Studies in the geography of disease, on the other hand, go far back in history also. Their main scope was to advance etiological knowledge—to find out whether the climate or the surroundings at large were responsible for a disease. The famous treatise on *Airs, Waters, Places* in the Hippocratic collection, in chief, had such a prognostic purpose.¹ It aimed to teach the doctor who came to a place unknown to him what the relations between surroundings and disease were in such a place, in order that he might get a right estimate of his patient's condition. The theory that epidemics were the result of cosmic or telluric influences, that a certain *genius loci* was essential, led to a very extensive investigation of geographical conditions, and for many centuries epidemiological literature had such an historical-geographical aspect. Up to the middle of the nineteenth century, the doctors, and particularly the pathologists, were highly interested in these studies. August Hirsch wrote a book which for a long time was the standard work on the subject.² Under the influence of Rudolf Virchow, however, anatomical investigations began to dominate pathology, and were followed by physiological research, so that there was little time for historical-geographical investigations, and only in the field of tropical medicine, a branch of pathology devoted chiefly to the diseases of definite countries, the geographical considerations could not be overlooked.

In the beginning of our century medical history took a new start, and it is obvious that much of its new activities was devoted to the history of disease. A special series for the history of infectious diseases was started by Sudhoff, Sticker, and others, but it did not survive the war. George Sticker, in Würzburg, who probably knows the history of epidemic diseases better than anyone else, wrote most valuable monographs on the history of cholera, pneumonia, plague, and syphilis. Yet this new develop-

¹ L. Edelstein, "Peri Aëron und die Sammlung der Hippokratischen Schriften," Berlin, 1931.

² *Handbuch der Historisch-Geographischen Pathologie*, ed. 2, Stuttgart, 1881-1886, 2 volumes.

ment had little influence on medicine. The investigations were carried on by historians, and little was known except among them.

On the other hand, we find today a revival of interest in geographical pathology. An International Society for Geographical Pathology was recently founded by Professor Askanazy, in Geneva, and held its first congress in 1931. It proved to be a great success. It seems to me, however, that both movements will have to join in order to get the best possible results, and the purpose of this paper is to show some of the problems concerned in this subject and to demonstrate why a close cooperation is necessary.

THE HISTORY OF DISEASE

To trace the history of a definite disease is a very arduous task. The ideal methods are those developed by paleopathology, according to which we examine human remains directly, for pathological changes. The examination of bones, of fossil animals, of prehistoric and early historical man, and the microscopic examination of soft tissues, made possible in the case of Egyptian mummies, brought out fundamental results—the evidence that disease has occurred at all times, and always did, in the same basic forms which we observe today. It would be wrong, however, to conclude that the distribution and frequency of disease were always the same. It is certainly important to know that tuberculosis, arteriosclerosis, and similar diseases occurred in Egypt in a far remote period. And yet we want to know more. We want to know whether these diseases were frequent or not, what part they played in the life of a definite society. In most cases we have not even the possibility of investigating human remains, and all we can do is to go through the entire literature and to see whether we can find a description of symptoms typical of the disease we are interested in. In some cases works of art, paintings and sculptures, may throw some light on pathological deformities. The eye of the artist sometimes saw more than the doctor's eye. And from such pictures we can ascertain that rickets, achondroplasia, and probably poliomyelitis existed in Egypt, although we have no written record to that effect. Yet in most cases our only method will be the critical interpretation of texts, and this is a very difficult task.

It is very easy to recognize the different types of malaria in ancient descriptions, because the attacks of fever were absolutely characteristic. Without considering the disease as a morbid entity in itself, each writer

describing malaria will tell of the intermittent character of the fever. In the same way we will recognize pneumonia without difficulty in the ancient literature, because there, too, the characteristic clinical features were relatively easy to describe. On the other hand, it is extremely difficult to identify diseases like typhoid, typhus, dysentery, diseases of the heart, and so on, because their symptoms were not striking enough to be described unequivocally at an early time. The Greeks had no ontological conception of disease. They described symptoms and groups of symptoms without definite borderlines. In most cases, they had no name with which to designate the disease—they merely called certain groups of symptoms by the name under which they were known to the common people or else they talked in a very general way of swellings in the region of the ears, or ulcers of the throat, etc.

It was only from the Renaissance on that the conception of disease as a morbid entity developed. It was by the strength of Sydenham's work, by the founding of pathological anatomy, and by other results of etiological research. Although syphilis is a very well characterized disease, to this day it has not been possible to ascertain whether the disease occurred in Europe before the discovery of America. Until a disease is discovered, and this means until a disease is recognized and described as a definite morbid process, it is extremely difficult to identify it in ancient descriptions.

The history of some of the acute infectious diseases is pretty well known. A great amount of work was devoted to the study of them. It is relatively easy to follow the course of such diseases because they arrested the attention not only of the medical men but of everybody. They were natural catastrophes that befell a place. They influenced the life not only of the individual but of entire communities, and had in many cases great social and economic consequences. We therefore hear much of such occurrences, and great epidemics like that of the Black Death in the fourteenth century have marked their epoch with an indelible stamp.

Other diseases, however, like those of the nervous system, the heart, the stomach, and the kidneys, have hardly been investigated in their historical development thus far. It will never be possible to trace them back to ancient times, as can be done in the case of epidemic diseases. And yet the history of these diseases can be written at least for the last few centuries. Very valuable results could be obtained without going further back than 1800. If we succeeded in giving a more or less complete

disease history of the nineteenth century, this alone would be an achievement of greatest significance.

Importance for the history of medicine. The history of disease is the starting point of all medicohistorical investigations. It is impossible to understand a physician's behavior without knowing about the diseases he was fighting. It is obvious that a doctor's task was not the same on some of the Aegean islands in the fifth century B.C. as it was in a small fourteenth century European town. Medicine is a practical art. It is not enough to know what the physician thought. We do not study the Hippocratic writings merely as a literary document of fifth century Greece. The physician's profession had a practical purpose, and we want to know whether a doctor did a good job or not, whether he succeeded in curing his patients or in preventing disease. Therefore we have to know the diseases in the different periods of history, and we have to ascertain whether these diseases were the same as today, having the same characteristics as we observe today.

To know the history of disease, however, is necessary also for a deeper understanding of medical theories. The importance given to the spleen in Greek medicine can be understood only when we realize that these theories were born in places where malaria was endemic and where megalosplenism was frequent, so that the spleen became even more outstanding than the liver.

Importance for the history of civilization. There can be no doubt that there must be certain relations between the civilization of a definite country in a definite period of history and the diseases observed at that time and place. The problem is to know of what kind these relations are. It seems to me that the whole question has to be approached from two different sides. Civilization influences the general pathological conditions and, on the other hand, is determined in its course by disease. Civilization creates new pathological conditions. It removes man from the natural rhythm of life. Each change of cultural conditions has a definite repercussion on the diseases of the time. It is quite obvious that the diseases of a wandering tribe in central Asia were other than the diseases in a medieval monastery. The fact that people live crowded in cities, far away from nature, has developed new diseases or at least has modified the frequency and intensity of other diseases. As far back as the sixteenth century, Paracelsus describes diseases peculiar to miners. In 1700 the Italian physician Ramazzini wrote a famous textbook on occupational diseases. In the eighteenth century, many books were written on diseases

of scholars, writers, and people frequenting the court. Great events like the Industrial Revolution were responsible for an entire change of pathological conditions. That wars and revolutions were always followed by the outbreak of epidemics is a well-known fact, and the World War was the first to deviate from that rule.

On the other hand, man, having attained to a higher civilization, begins to fight disease. An improvement of the social condition of the people will improve public health conditions as well. Many diseases have been wiped out entirely, or have been reduced in their frequency, so that they no longer threaten humanity. In the eighteenth century, thousands of people died of smallpox, a disease today unknown to most civilized countries. Rabies was a much-dreaded disease until Pasteur gave us the means to prevent it. The most creditable achievement of modern medicine and hygiene is that many diseases today have become avoidable. Typhoid, which not long ago was considered a natural catastrophe, today is a scandal for which the responsible men are tried in many countries.

On the other hand, the course of civilization might be largely influenced by disease. First of all, civilization is possible only in countries where the health conditions are more or less good. Vast regions could not be settled on account of the prevailing diseases. Until modern hygiene gave the means of fighting infectious diseases efficiently, many colonizing enterprises were bound to fail.

The coming and going of epidemics was often followed by similar improvements in civilization. The Roman Campagna was a flourishing landscape four times in history—in pre-Roman times, when the Roman Empire was at its height, in the eighth and ninth centuries, and during the Renaissance. Today it is beginning to flourish once more. But in the intervals between these periods the Campagna was deserted, and nobody could be induced to live there. Malaria raised its head and made all life impossible. Following a certain rhythm, the disease decreased, and the immediate result was repopulation of the country. In this case, the entire history of a landscape was determined by one single disease.³ That the Black Death in the Middle Ages had great social and economic consequences is a well-known fact and need not be repeated.

There is no doubt that diseases other than epidemics influenced cultural conditions also. A landscape where goiter is predominant or

³ A. Celli, *Die Malaria in ihrer Bedeutung für die Geschichte Roms und der römischen Campagna*, Leipzig, 1929.

where rheumatisms are frequent will suggest the disease in its meteorological and climatic aspects.

Another point is how far the work of an individual is influenced by the diseases from which he suffered. It is certainly difficult to say what part tuberculosis played in the creative power of Spinoza, or Mozart, or Schiller. It is easier to recognize the influence of a mental disease in the paintings of Van Gogh. Disease always is a great experience in the life of a man, and such an experience might prove inspiring. And what is true for the individual is true for the community as well. The great epidemics were great experiences for entire communities, and many works of art were erected as monuments under the inspiration of such experience.

Importance for modern medicine. In Alexandria, a medical school developed, the followers of which called themselves empiricists. Their chief doctrine was that the primary causes of disease are too obscure to be elucidated, and that the physician has to rely entirely on experience and observation. His chief source of knowledge was his own observation. The life of man, however, is short, and observations made in a lifetime are but a few. Therefore, they said, you must take profit not only of your own observations but of those of others as well. The doctors of ancient times were no fools. They saw a great deal, and they tell us about what they saw in their books. The physician therefore has to study the medical literature, and not only that of his own days but the old books as well. This is true today, too. If you want to have a complete account of the features of a disease, it will not be enough to know a disease as it happens to occur in our time, and in the place where we live, but we must study its history as well. As a matter of fact, we always do so. When we speak of the mortality of a disease as increasing during the last five years, we make an historical statement. All hospital reports are historical documents, although they cover a very short period. If we broaden our outlook, if we do not satisfy ourselves by studying the diseases only over a period of a few years but investigate the history of a disease over a long period of time, our results will be much more reliable.

Historical investigations are indispensable in studying epidemic diseases. Pandemics of influenza occur once in a generation. And it is certainly important to know that the history of influenza can be traced far back in the Middle Ages, and that it came over the world regularly once every thirty or forty years and with much the same characteristics.

It is further important to know that many diseases have changed in their character Syphilis, which is a chronic disease today, was much more acute at the end of the fifteenth and the beginning of the sixteenth century Scarlatina was much more malignant a few decades ago

Since the Middle Ages we have found out a great deal about the mechanisms of epidemics, and the discovery of bacteria gave us a profound insight into the pathological genesis of epidemic diseases As yet there are still unsolved problems We know the origin of the plague, and we know that a disease spreads along the highway of traffic And yet we do not know why during the Middle Ages from the sixth to the fourteenth century there was no real epidemic of the plague in Europe, although the Crusades gave sufficient opportunity for spreading the disease We do not know why the sweating sickness which befell Europe in the winter of 1528-1529, missed France and the southern European countries and yet reached serious proportions in the Germanic countries There are factors in the origin of epidemics that still have escaped our attention, of which a careful historical study covering long periods might prove enlightening

The history of disease studied on a broad basis teaches us what the social consequences were and gives us a picture of the interrelations between disease and society which might be of great value in further investigations

THE GEOGRAPHY OF DISEASE

Whenever we trace the history of a disease, we do it in a definite country We cannot study the history of the plague at large It will be the history of the plague in the East, or in Europe, or a definite country In other words, we cannot separate the history from the geography of disease And an historical pathology will always be an historical geographical pathology

Modern pathologists, on the other hand, investigating the occurrence of a disease in a certain country, cannot avoid the question whether the disease was there at all times or has made its appearance only recently, whether it was there in the same intensity and frequency, or whether there was change in the course of time Studies in geographical pathology will always be incomplete as long as they do not take history into consideration It seems to me a great mistake that the International Society for Geographical Pathology has ignored history, so far This will

handicap its work. International meetings of pathologists who came together to discuss the occurrence of a disease in their respective countries have taken place often before. If the new society wishes to fulfill its purpose, it will have to develop the historical side of the subject as well.

CONCLUSION

The history and the geography of disease are inseparable themes. Historical-geographical studies in pathology can be of great importance for many investigations. Good work is going forward on these subjects all over the world, but it is scattered and not easily accessible. Therefore it seems to me opportune to encourage and centralize these studies by: (1) Founding an international journal devoted to historical-geographical pathology, giving historical as well as modern geographical studies and a complete bibliography of the subject. (2) To begin a series of monographs on the history and geography of the different diseases, meant to replace the book of August Hirsch. (3) To publish at the same time an atlas showing geographically the distribution of diseases in time and space.

THE HISTORY OF MEDICAL LICENSURE

THE idea of making the practice of medicine dependent on a license, a certificate issued by a competent body testifying that the bearer has undergone a training considered adequate, is an idea that originated in the Middle Ages. The European Middle Ages created an institution that was modified in the course of time but survived in its basic idea to the present day. The idea of licensing the medical profession resulted from the general structure of medieval society, which was strictly organized according to status, crafts, trades, and professions. Each such vocational group had regulations, standard-setting codes, guaranteeing highly qualified services to society. It was recognized that such standards were particularly important in the case of the medical profession. In no other profession is lack of knowledge so serious in its consequences as in medicine. A wrong legal judgment can be corrected by a higher court. A wrong diagnosis or a wrong treatment may result in the death

.....

The licensure of physicians is one method by which society controls the social institution of medicine and protects itself from incompetent doctors. The way licensure is carried out, however, has greatly varied in different times and places, and in this paper Dr. Sigerist traces this development from ancient times to the present. He was invited to give this account by the American Medical Association, and read it before its Annual Congress on Medical Education, Hospitals, and Licensure, held in Chicago on February 18, 1935. The paper was published in the *Journal of the American Medical Association* 104 1056 1060, March 30, 1935. This is the only paper Dr. Sigerist published in the official journal of the American Medical Association. It was reprinted in *Diplomate* 7 229 236, 1935, and in *Centaur* 45 17 23, 70, 1939.

of the patient. No wonder society tried to protect itself from ignorant physicians. If the profession was to be respected and society was to have confidence in it, standards must be set, and the man living up to these standards had to testify legally that he was a real physician. In this way a clean cut distinction was established between the physician who had undergone a prescribed training and the pseudophysician or quack. Great credit must be given to medieval society not only for having recognized the importance of these facts but for giving them a legal confirmation and for having set an example for all time to come.

MEDICAL PRACTICE IN ANCIENT TIMES

Attempts at some kind of regulation of medical practice can be found before the Middle Ages, and they will have to be reviewed briefly. The oldest document of the kind that I know of is to be found in the sacred books of the Parsis, the Avesta. In one of these books, the Vendidad, a book very similar in character to Leviticus, is found a tariff regulating the physician's fee, very much like the one in the Code of Hammurabi. Besides, there are rules concerning the admission of the surgeons to practice. The text runs:¹

36(94) Maker of the material world, thou Holy One! If a worshipper of Mazda want to practice the art of healing, on whom shall he first prove his skill?—on worshippers of Mazda or on worshippers of the Daēvas?—

37(96) Ahura Mazda answered: "On worshippers of the Daēvas shall he first prove himself, rather than on worshippers of Mazda. If he treat with the knife a worshipper of the Daēvas and he die, if he treat with the knife a second worshipper of the Daēvas and he die, if he treat with the knife for the third time a worshipper of the Daēvas and he die, he is unfit to practice the art of healing forever and ever.

38(99) Let him therefore never attend any worshipper of Mazda; let him never treat with the knife any worshipper of Mazda, nor wound him with the knife. If he shall ever attend any worshipper of Mazda, if he shall ever treat with the knife any worshipper of Mazda and wound him with the knife, he shall pay for it the same penalty as is paid for wilful murder.

39(102) If he treat with the knife a worshipper of the Daēvas and he recover; if he treat with the knife the second worshipper of the Daēvas and he recover; if for the third time he treat with the knife a worshipper of the Daēvas and he recover; then he is fit to practice the art of healing forever and ever.

40(104) He may henceforth at his will attend worshippers of Mazda; he may at his will treat with the knife worshippers of Mazda, and heal them with the knife.

¹ The Zend Avesta, I, The Vendidad, edited by J. Darmesteter, in *The Sacred Books of the East*, edited by F. M. Müller, vol. 4, Oxford 1880, pp. 23-24.

In other words, parts of society, the true believers, were protected against lack of knowledge in the surgeon.

This is a very exceptional document, for throughout antiquity medical practice was open to all. The physicians had to compete with the quacks, and some of the Hippocratic writings show how serious this competition was. Some physicians endeavored to outdo themselves by dressing extravagantly and by displaying showy instruments, and it is highly probable that the art of prognostic developed to such an extent in Greece not only for medical reasons but through the tendency to gain the patient's confidence by telling him right away what his case was and what would happen to him.² The Hippocratic oath was not a legal document. It was a private contract between master and pupil, the master adopting his pupil as a son. And, besides, it set ethical standards.³ No worldly authority could enforce the oath. It is not known how long it was in effect; in all probability it was restricted to a small group of physicians in the early days of Greece.

In ancient Rome, medical practice was also open to all. But then, from the first century B.C. on, the physicians were given a privileged position in society. In 46 B.C., Julius Caesar presented all free-born Greek physicians on Roman soil with the right of Roman citizenship. Augustus knighted his body physician Musa. In the ensuing years the privileges accorded physicians became still greater. The doctors were exempt from taxation, free of military service, and free of the duty of taking lodgers and of accepting offices. It is obvious that, the greater the privileges, the more tempting it became to call oneself a physician in order to obtain them. So far there were no regulations of any kind to define who a physician was. In the reign of Antoninus Pius the number of physicians granted the privileges was restricted to five, seven, or ten for each city, according to the size of the city. These physicians were called the *valde docti*, and in order to attain to this rank they had to present their credentials to prove that they actually possessed medical knowledge and experience. The medical profession was not licensed—there were still endless pseudophysicians—but each city at least had a few doctors whose knowledge was guaranteed by the municipal authorities.⁴

² Ludwig Edelstein, "Peri aeron und die Sammlung der Hippokratischen Schriften" *Problemata, Forschungen zur klassischen Philologie*, No. 4, Berlin, 1931.

³ Karl Oelshgräber, "Die ärztliche Standesehtik des hippokratischen Eides," *Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin* (Berlin) 3 29 49, 1932.

⁴ T. Meyer Steineg, *Geschichte der römischen Aerztesandes*, Kiel, 1907.

ATTEMPTS AT LICENSURE IN ARABIA

In the Arabic world there seems to have been no general institution of medical licensure. But individual attempts can be traced there also. In 931 A.D. the Caliph al-Muqtadir decided that no one should practice medicine in the capital, in Baghdad, unless he had been examined by the physician Sinán ibn Thábit of Harrán. A few generally respected physicians were exempted from these examinations, but all the others, and it is said that there were more than 860 physicians in Baghdad at the time, had to submit themselves to this test. It is not known whether this attempt was repeated by other caliphs or not.⁵

LICENSURE IN THE MIDDLE AGES

Medical licensure, as an institution, became general in the European Middle Ages. I shall not discuss the standards required. They of course varied from century to century and depended on the status of medicine. But an examination will have to be made into the body that conferred the licenses and how licensure was handled. Conditions were relatively simple as far as the surgeons were concerned. The surgeons were craftsmen and as such were organized in craft guilds. The guilds were vocational groups that were established in the growing cities in the eleventh and twelfth centuries. They were workers' associations; to join them was made compulsory by the state. No craftsman could exercise his craft outside the guild. From the thirteenth century on, the guilds became self-governing bodies and in many cities gained great political power. The guild was a stabilizing agency. It set working hours, wages, and prices. It had a definite monopoly in the craft. It excluded competition by setting definite standards. Its tendency was to make all masters of the guild equal in production and earning. It was therefore not a progressive institution, but it guaranteed a high quality of work to society. A definite hierarchy was established within the guild. A young man desiring to become a surgeon entered the guild as an apprentice. After from two to three years' apprenticeship with a master he was given a certificate and continued his work for from four to six years as a journeyman; if he wanted to become a master, he had to pass a strict examination. He had to show his birth certificate—having to be of

⁵ E. G. Browne, *Arabian Medicine*, New York, Macmillan Company, 1921, p. 40.

legitimate birth—and had to pay dues and submit to a practical as well as a theoretical examination, given by the masters, to whom, very often, physicians were added as examiners. No practice was possible outside the guild and the surgeons in most places were at the same time barbers and keepers of bathhouses. In places where the surgeons were not numerous enough to form their own guilds they joined other guilds, very often the guild of blacksmiths, the idea of this queer combination being that the members of the guild had the privilege of making their own tools. The surgeons therefore made their own instruments, and this formed the connecting link with the blacksmiths.

Now to the physicians. They, obviously, were no longer craftsmen. They were members of a liberal academic profession and would not fit into the guild system. The physicians organized and their licensing body became the medical faculty of the universities. It is interesting that the first medieval regulations were issued in connection with the first medical faculty of the western world with the school of Salerno. In 1140 the Norman king Roger issued an order stating

Who from now on wishes to practice medicine has to present himself before our officials and examiners in order to pass their judgment. Should he be bold enough to disregard this he will be punished by imprisonment and confiscation of his entire property. In this way we are taking care that our subjects are not endangered by the inexperience of the physicians.

Nobody dare practice medicine unless he has been found fit by the convention of the Salernitan masters.

From 1231 to 1240 the Hohenstaufen emperor Frederick II published his *Constitutiones Imperiales*, a code based on the old Norman codes but adding new laws. The regulations concerning physicians are very detailed. The curriculum included three years of logic that is a training in the humanities followed by five years in medicine after which the student was examined. But before practicing independently the physician had to do practical work under the guidance of his teachers for one more year. The regulations go on, setting definite standards for medical practice, for the controlling of the pharmacies and the establishing of a fee code. Medical licensure was now definitely established. The *medendi licentia* was given to candidates who had gone through the prescribed curriculum and had been examined by the most competent physicians, the Salernitan masters. Representatives of the state (*ordinati nostri*) were present at the examination, so that it was under state control. The license was issued not by the medical school but by the em

peror or his representatives. Heavy penalties threatened whoever practiced without a license.⁶

An example was set that was followed by the other European universities. The student had to pass not only one but several examinations. After two or three years of work he graduated as a bachelor (*baccalaureus*). After from two to three more years and another examination he could become a licentiate, which conferred the right to practice. As a rule, it was required that he be twenty-six or twenty-eight years old. The license was conferred as a rule not by the worldly authorities but by the chancellor of the university, usually a cleric representing the pope. Another examination, which, however, was mostly nominal, consisting in a disputation, conferred the title of *magister*, or doctor, the doctor having not only the privilege but the duty to teach for some time. Special arrangements had to be made for Jewish physicians, who could not be licensed by a representative of the pope; in such cases the license was issued by the faculty.⁷ Whoever practiced without a license was excommunicated and, in addition, persecuted by the municipal authorities. The license gave a physician the privilege of practicing in all Christian countries. In Paris, the formula spoken by the chancellor when conferring the license was:⁸

Ego, cancellarius, auctoritate apostolica, qua fruor in hac parte, do vobis licentiam legendi, interpretandi et faciendi medicinam hic et ubique terrarum. In nomine Patris, et Filii, . . . (I, the Chancellor, by the power invested by the apostolic authority which I exercise in these parts, confer on you the faculty to teach, to interpret, and to practice medicine, here and in all countries. In the name of the Father, the Son, . . .)

When a physician moved to another city, he had to submit to certain formalities. First of all, the municipal authorities had to grant him permission to settle down, a permission that everybody had to seek, whether he was a physician or not. Then the physician had to present his diplomas to the university of the place and have his privileges renewed. This consisted in the paying of a fee and another disputation, the idea of which was to demonstrate that the candidate not only had degrees but

⁶ The Latin text in Huillard-Bréholles, "Constitutiones Regni Siciliae," *Historia Diplomatica Frederici Secundi*, vol. 4, Paris, 1854. English translation in E. F. Hartung, "Medical Regulations of Frederick the Second of Hohenstaufen," *Medical Life* 11:587-601, December, 1934.

⁷ Guido Kisch, *Die Prager Universität und die Juden, 1315-1815*, mit Beiträgen zur Geschichte des Medizin-Studiums, Mährisch Ostrau, 1935.

⁸ A. Corlieu, *L'ancienne Faculté de Médecine de Paris*, Paris, 1877, p. 72.

was still conversant in the subject. Endless conflicts resulted if a man did not readily submit to these formalities. History tells of many such cases. Paracelsus in 1527 was invited by the city authorities to practice medicine in Basel and was appointed municipal physician. Being a doctor of the University of Ferrara, he was entitled to lecture at the university but, stubborn as he was, he refused to submit to the required formalities, and the result was a permanent hostility of the university toward him which eventually contributed to his peremptory departure from Basel. Johannes Sambucus, a Hungarian physician, practiced in Vienna without having shown his credentials to the faculty; whereupon the faculty in 1567 denounced him to the city authorities, and he would have been expelled from the city had not the Emperor Maximilian II interfered.⁹

In cities where there were no universities the physician was compelled to present his diplomas to the city authorities, usually to the board of health. The fact that many, and among them some of the largest, cities had no universities led to the establishment of special medical organizations, as for instance the Royal College of Physicians in London, which was granted a charter, September 23, 1518. It consisted originally of eight persons, and its purpose was to improve and regulate the exercises of the art of physic. No person except a graduate of Oxford or Cambridge was allowed to practice medicine in England unless he had been examined and approved by the president and three members of this college. This example was followed a century later by Scotland. The fact that irregular practitioners intruded in increasing numbers in Scotland made the need for such an institution strongly felt, and an application was made in 1617 to King James I of England for the establishment of a college, according to which the practitioners of medicine in Scotland should be incorporated into a Royal College of Physicians, which was to appoint seven members to examine all those who intended to practice in Scotland. The exercise of medicine without a diploma of the college was to be made illegal. Although the application was favorably received at the court, the political conditions delayed the founding of the college, but in 1681 a charter was granted to the college. It is interesting to note that the universities, the municipal corporations, and even the bishops and archbishops opposed the founding of the college violently, as they considered this an intrusion into their own rights and privileges. While so far the universities had been the only licensing

⁹ Stephen Bálint-Nagy, "Der weltberühmte Historicus Johannes Sambucus (1531-1584) als Arzt," *Archiv für Geschichte der Medizin* 24:150-174, April 30, 1931.

bodies, from then on in England and Scotland licenses were granted by medical organizations, i.e., by medical practitioners.

The medieval university was a powerful, well-organized body which not only transmitted knowledge but considered it its duty to keep the traditions pure. It was fully aware of its responsibilities, and the license issued by a faculty of medicine was a full guaranty of the adequate knowledge of its bearer. In the centuries following the Renaissance, the universities lost their high standing. They did not follow the trend of the times. They clung to the old traditions. A new medical science developed, and it developed outside the universities, centering its efforts around the new academies. In the Middle Ages most universities were controlled by the church, and this guaranteed equal standards. After the Reformation the conditions were greatly changed. The church lost its grip on many of the universities, and there was a marked tendency toward state interference in university matters. In the seventeenth and eighteenth centuries the standard of the universities became more and more unequal. While some of the universities were still conscientious in delivering degrees, others became lax. A degree of such a university was therefore no longer a guaranty of a graduate's fitness to practice medicine, and the states began to protect themselves by disregarding the academic degree.

LICENSURE IN PRUSSIA

Until 1725, whoever had a master's degree of a medical faculty could practice medicine in Prussia, and whoever had a master's patent of a surgeon's guild could practice surgery. In 1725, however, a bill was passed according to which the master of medicine could not exercise his profession before he had taken a course in anatomy and discussed a *casus medico-practicus* before the collegium medicum and the *medico-chirurgicum*, which was a state board of health.¹⁰ The right of licensure was therefore taken from the universities and assumed by the state. New regulations were passed in 1789 and 1791; the candidate was examined "in the most important subjects of medicine." In other words, he now had to take two examinations, one for his doctor's degree at the university and, in addition, one for the license before a state board. After the unification of Germany, the license obtained in one of the states gave the privilege of practicing in all the other states, and it was decided that

¹⁰ Theodor Billroth, *The Medical Sciences in the German Universities, a Study in the History of Civilization*, New York, Macmillan Company, 1924.

the state examination should be given by the physicians most competent in the matter, namely, by the university professors of the medical faculties. In this way one avoided submitting the candidates to two examinations, which would be a mere repetition and a waste of time, the doctor's degree was conferred after the candidate had passed his state examination and had submitted an inaugural dissertation. The universities had been reorganized in the beginning of the nineteenth century and had a more or less equal standing, so that the professors could be entrusted with the state examination. After a development of 700 years, one returned to institutions very similar to those which prevailed in southern Italy at the time of Frederick II. The faculties instructed the students according to a curriculum prescribed by the state, they examined the students, and the state controlling the examination issued the licenses. Without a license, no person may call himself a physician. However, in 1869 a bill was passed according to which everybody might perform medical activities without a license, provided he did not call himself a physician—a very fatal regulation, the result of the prevailing liberalistic attitude of the time, for which Rudolf Virchow was largely responsible. It gave quackery a legal status.

LICENSURE IN AUSTRIA

In Austria the development was somewhat different. Until 1749 the license was conferred by the universities of Vienna and Prague. In 1749 the medical studies were reorganized, the dean lost his authority, and the curriculum and examinations were controlled by a director of studies, who was a state official. The state examination was given by the faculty, but under state control. The same is true for Switzerland today, where a physician representing the state is present at all examinations.

AMERICAN MEDICINE

The facts are well known concerning the development in this country, so that I can be brief. American medicine went in three hundred years through all the periods through which European medicine had gone in more than 2000 years. In the beginning, here just as in ancient Greece, medical practice was not controlled. Physicians were badly wanted, and whoever was able and willing to help was therefore welcome. There was some quackery, to be sure, but in the early colonial times the number

of quacks was undoubtedly not large. In the small cities, where everybody knew everybody else, it was easy to learn who had real medical knowledge and who had not. Physicians were trained the same as Hippocratic doctors, by serving an apprenticeship with a physician, and the only diploma was a certificate issued by the physician, testifying as to how long and how successfully the apprentice had served.

Toward the end of the colonial period and right after the Revolution, the need for a stricter control of medical practice was felt, and, just as in medieval Europe, so in this country was the doctor's degree of a medical school, foreign as well as American, considered a guaranty for adequate medical knowledge. The universities in this country, however, were not numerous. Their purpose in the beginning was not to replace the system of apprenticeship but rather to complete it. Many students could not afford to go abroad, and many entered practice without having studied at any medical school at home. Who was to confer the license on them? Just as the Royal College of Physicians in London and in Edinburgh became very influential licensing bodies, so the medical societies organized in this country in many states became the agencies controlling medical practice and conferring licenses. This was the case in Massachusetts in 1781 and in New Hampshire in the same year. So far, the development had been very sound and the conditions were very similar to those in England. In addition, several states, New York in 1760 and New Jersey in 1772, attempted a state regulation of medicine by appointing boards of examiners.

The tremendous development in the nineteenth century, the opening up of a continent, created entirely new conditions. Physicians were wanted more than ever before, and endless medical schools were founded, many of them with quite insufficient equipment. The licenses conferred by these schools did not mean much. Besides, an institution developed that had no parallel in Europe—the growth of organized and recognized medical sects that paralyzed the efforts of the medical organizations, as well as those of the state boards. At the time of the Civil War conditions were chaotic, but after the war the readjustment followed rapidly. As the medical schools could not be trusted, the states, or some agencies representing the states, had to take over the control of medical practice. From 1873 on, beginning in Texas, state boards of medical examiners were established, and by 1895 nearly all the states had such an institution. Every one knows what a fundamental part these boards have played in the reorganization of medicine in this country. If America today has

a high standard of medical profession and if American medicine is playing an ever-increasing role in world medicine, this is not least due to their activities. They were influential in the reform of medical education and succeeded in raising the standards gradually and constantly. The establishment of the National Board of Medical Examiners in 1915 was a further step in this development.

If the conditions in this country are compared with those in Europe, it will be found that they are similar to those which prevailed in most European countries in the beginning of the nineteenth century. The student has to pass two examinations before two different bodies, one for the degree and one for the license. Just as the medical schools of Europe were reorganized in the beginning of the nineteenth century, so they have been from 1893 on in this country. If the development is to follow the general trend, the next phase would be to re-entrust the medical schools with the examination of the candidates, whereby the examinations could be controlled by the representatives of the state boards or national board. I know, of course, that the conditions here are different from those in Europe, that the standard of schools is not yet equally high, and that the different states have different problems to face.

CONCLUSION

If I may add a personal remark, it is that I do not believe either in tests or in examinations. They are a necessity, as no better method has yet been found, but it is well known that certain students have a special ability to pass examinations while otherwise brilliant students quite often show strong inhibitions in examinations. It is also known that actual knowledge alone does not make a good physician, that the character and the whole personality have to be taken into consideration very strongly. In order to judge whether a man is fit to practice medicine or not, one must first of all know him and must have observed him at the bedside of the patient. The longer one has known him, the more will one be able to pass judgment on him.

The history of medical licensure begins in the Middle Ages. It is a unique feature in the history of medicine, in that the very beginning, the initial solution of the problem, was so perfect that a development of nearly eight hundred years could not improve it.

AN OUTLINE OF THE DEVELOPMENT OF THE HOSPITAL

THE visitor landing in New York two hundred years ago, in 1736, entered a city which, according to the census of 1731 had 1400 houses and 8628 inhabitants. Walking up Broadway he would see, where the City Hall now stands, a new wooden building and would be told that this was the "Publick Workhouse and House of Correction of the City of New York." This was, in the words of Dr. Carlisle, "fifty-six feet long and twenty-four feet wide, two stories high, with a cellar. In the cellar on the east side were rooms for those put at hard labor and for weaving; in the middle was a store-room for the provisions, and on the west a strong-room or cage for the refractory, besides rooms for spinning, carding, etc. On the first floor, to the east, was the general dining-room, upstairs were quarters for the keeper and his family, and on the west the room especially set apart as the infirmary, and to be used for no other

.....
New York City has a great system of municipal hospitals whose beginnings can be traced to the infirmary of a public workhouse established in 1736. In honor of the two-hundredth anniversary of New York's municipal hospital service, the Department of Hospitals of New York City held exercises on May 12, 1936, at the New York Academy of Medicine, where Dr. Sargent was invited to present this paper on the history of hospitals. The paper was published in the *Bulletin of the Institute of the History of Medicine* 4:373-381, July, 1936.

purpose whatever. . . . a room about twenty-five by twenty-three feet, on the upper floor on the Broadway side, the primitive trace of Bellevue Hospital. It contained six beds. Its first medical officer was Dr. John Van Beuren. His salary was £100 a year, out of which he was expected to supply his own medicine."¹

This certainly was not much of a hospital. The Philadelphians do not like it when the New Yorkers speak of having had a hospital built as early as 1736. There can be no doubt that the New York workhouse was not a hospital; it was nothing that could compare with the Pennsylvania Hospital built in 1752. It was a poorhouse and penitentiary, providing medical care for the sick inmates in its infirmary room, but it cannot possibly be compared to an institution erected for the sole purpose of treating patients. And yet we are justified in celebrating today the two-hundredth anniversary of the inauguration of municipal hospital service in the city of New York because it cannot be denied that in this old workhouse the municipality gave free medical service to at least a few indigent sick. Besides, credit has to be given to the authorities for the fact that they appointed not just a cheap quack to take care of the sick inmates of the workhouse but an excellent doctor, who as a student of Boerhaave had had the best medical training that Europe could give at that time.

The foreign visitor landing in New York a hundred years later, in 1836, would find that the city had greatly developed. The census of 1835 reported 270,089 inhabitants. He would hear that in the past hundred years the city had been visited by very serious epidemics of plague, yellow fever, typhus fever, cholera, compelling the authorities to take action. In 1794 a pesthouse was established at Kip Farm on a place called Belle Vue. The almshouse was removed to the same place in 1816, and a fever hospital was added in 1825. This complex establishment was still not a hospital in the modern sense of the word but a combination of jail, poorhouse, and hospital. However, a first step towards improving the conditions was taken in 1836 when the male prisoners were transferred to Blackwell's Island, the women prisoners being removed two years later.

The visitor in New York in 1836, however, would find a real hospital in the city devoted exclusively to the care of the sick, New York Hospital. In 1769 Samuel Bard, one of the leaders of the medical profession in New York, in his commencement address at King's College said:

¹ Robert J. Carlisle, *An Account of Bellevue Hospital* . . . New York, 1893, p. 5.

it is truly a reproach, that a City like this, should want a public Hospital, one of the most useful and necessary charitable Institutions that can possibly be imagined

The labouring Poor are allowed to be the support of the Community, their Industry enables the Rich to live in Ease and Affluence and it is from the Hands of the Manufacturer we derive, not only the Necessaries but the Superfluities of Life, whilst the poor Pittance he earns will barely supply the Necessities of Nature, and it is literally by the sweat of his Brow, that he gains his daily Subsistence, how heavy a Calamity must Sickness be to such a Man, which putting him out of his Power to work, immediately deprives him and perhaps a helpless Family of Bread!

Nor would the good Effects of an Hospital be wholly confined to the Poor, they would extend to every Rank, and greatly contribute to the Safety and Welfare of the whole Community

Another argument, (and that by no means the least) for an Institution of this Nature, is that it affords the best and only means of properly instructing Pupils in the Practice of Medicine, as far therefore, as the breeding of good and able Physicians which in all Countries and at all Times has been thought an object of the highest Importance, deserves the consideration of the Public, this Institution must likewise claim its Protection and Encouragement²

A charter was granted to the Society of the New York Hospital in 1771 A building was started but a fire and the Revolutionary War interrupted the development, and it was only from 1791 on that New York Hospital began to serve its purpose The mentally sick patients of New York Hospital were transferred to a separate building after a few years, and the visitor of 1836 would find in the north of the city a handsome new building, Bloomingdale Asylum, opened in 1821³

New York in 1836 had other medical facilities for the indigent sick The New York City Dispensary was started in 1791 It was financed through voluntary contributions entitling the donors to have patients treated free of charge Isaac Roosevelt was President, Richard Bailey and Samuel Bard were Senior Physicians Twelve other physicians helped them in their work In 1805 the New York City Dispensary was incorporated It joined with the Kine Pock Institution in 1815 The corporation of the city of New York gave land for a building⁴ An eastern and northern dispensary were added in subsequent years⁵

² Samuel Bard *Two Discourses Dealing with Medical Education in Early New York*, New York 1921 pp 15 17

³ *A Psychiatric Milestone, Bloomingdale Hospital Centenary, 1821 1921*, privately printed 1921

⁴ Francis R Packard, *History of Medicine in the United States*, New York, 1931, vol 1, pp 244 246

⁵ *Manual of the Corporation of the City of New York for the year 1850*

purpose whatever a room about twenty five by twenty three feet, on the upper floor on the Broadway side, the primitive trace of Bellevue Hospital. It contained six beds. Its first medical officer was Dr John Van Beuren. His salary was £100 a year, out of which he was expected to supply his own medicine.¹

This certainly was not much of a hospital. The Philadelphians do not like it when the New Yorkers speak of having had a hospital built as early as 1736. There can be no doubt that the New York workhouse was not a hospital, it was nothing that could compare with the Pennsylvania Hospital built in 1752. It was a poorhouse and penitentiary, providing medical care for the sick inmates in its infirmary room, but it cannot possibly be compared to an institution erected for the sole purpose of treating patients. And yet we are justified in celebrating today the two hundredth anniversary of the inauguration of municipal hospital service in the city of New York because it cannot be denied that in this old workhouse the municipality gave free medical service to at least a few indigent sick. Besides, credit has to be given to the authorities for the fact that they appointed not just a cheap quack to take care of the sick inmates of the workhouse but an excellent doctor, who as a student of Boerhaave had had the best medical training that Europe could give at that time.

The foreign visitor landing in New York a hundred years later, in 1836, would find that the city had greatly developed. The census of 1835 reported 270 089 inhabitants. He would hear that in the past hundred years the city had been visited by very serious epidemics of plague, yellow fever, typhus fever, cholera, compelling the authorities to take action. In 1794 a pesthouse was established at Kip Farm on a place called Belle Vue. The almshouse was removed to the same place in 1816, and a fever hospital was added in 1825. This complex establishment was still not a hospital in the modern sense of the word but a combination of jail, poorhouse, and hospital. However, a first step towards improving the conditions was taken in 1836 when the male prisoners were transferred to Blackwell's Island, the women prisoners being removed two years later.

The visitor in New York in 1836, however, would find a real hospital in the city devoted exclusively to the care of the sick, New York Hospital. In 1769 Samuel Bard, one of the leaders of the medical profession in New York, in his commencement address at King's College said

¹ Robert J. Carlisle *An Account of Bellevue Hospital*

. . . it is truly a reproach, that a City like this, should want a public Hospital, one of the most useful and necessary charitable Institutions that can possibly be imagined.

The labouring Poor are allowed to be the support of the Community; their Industry enables the Rich to live in Ease and Affluence, and it is from the Hands of the Manufacturer we derive, not only the Necessaries, but the Superfluities of Life; whilst the poor Pittance he earns will barely supply the Necessities of Nature, and it is literally by the sweat of his Brow, that he gains his daily Subsistence; how heavy a Calamity must Sickness be to such a Man, which putting him out of his Power to work, immediately deprives him and perhaps a helpless Family of Bread!

Nor would the good Effects of an Hospital be wholly confined to the Poor, they would extend to every Rank, and greatly contribute to the Safety and Welfare of the whole Community. . . .

Another argument, (and that by no means the least,) for an Institution of this Nature, is, that it affords the best and only means of properly instructing Pupils in the Practice of Medicine; as far therefore, as the breeding of good and able Physicians, which in all Countries and at all Times has been thought an object of the highest Importance, deserves the consideration of the Public, this Institution must likewise claim its Protection and Encouragement.²

A charter was granted to the Society of the New York Hospital in 1771. A building was started but a fire and the Revolutionary War interrupted the development, and it was only from 1791 on that New York Hospital began to serve its purpose. The mentally sick patients of New York Hospital were transferred to a separate building after a few years, and the visitor of 1836 would find in the north of the city a handsome new building, Bloomingdale Asylum, opened in 1821.³

New York in 1836 had other medical facilities for the indigent sick. The New York City Dispensary was started in 1791. It was financed through voluntary contributions entitling the donors to have patients treated free of charge. Isaac Roosevelt was President; Richard Bailey and Samuel Bard were Senior Physicians. Twelve other physicians helped them in their work. In 1805 the New York City Dispensary was incorporated. It joined with the Kine-Pock Institution in 1815. The corporation of the city of New York gave land for a building.⁴ An eastern and northern dispensary were added in subsequent years.⁵

² Samuel Bard, *Two Discourses Dealing with Medical Education in Early New York*, New York, 1921, pp. 15-17.

³ *A Psychiatric Milestone, Bloomingdale Hospital Centenary, 1821-1921*, privately printed, 1921.

⁴ Francis R. Packard, *History of Medicine in the United States*, New York, 1931, vol. I, pp. 244-246.

⁵ *Manual of the Corporation of the City of New York for the year 1850*.

In 1818 an eye infirmary was established. It was incorporated in 1821 as New York Infirmary, and in 1823 a department for the treatment of the diseases of the ear was added.⁶ The city besides could show other welfare institutions, an institute of the deaf and dumb, an institute for the blind, and the Lying In Asylum.

These medical institutions were by no means sufficient for a city of nearly 300,000 inhabitants, nor were they ideal as far as equipment and service were concerned. But they represented a promising beginning and could compare not unfavorably with the institutions of other American cities.

A hundred years is a short period in history, and yet the visitor landing in New York today, in 1936, will find the result of a development unique in history, a city grown to 7.6 million inhabitants, Bellevue no longer a penitentiary but a modern hospital of more than 2000 beds, New York Hospital not only one of the biggest but one of the most beautiful buildings in the city, up in the north the imposing Columbia Presbyterian Center, and in between innumerable hospitals both large and small, 19,000 municipal beds or 42,000 beds all in all serving the population of New York.

This tremendous development is characteristic of the hospital development in America in particular and of the development of the hospital in the western world at large. In two hundred years America repeated 1600 years of history of the European hospitals, going through all its phases at a tremendous speed and even surpassing the old world.

Two factors determine the history of the hospital: society on one side, medicine on the other side. It seems to me that three periods can be distinguished in the history of the western hospital. The first period begins in the early middle ages. There were hospitals before, to be sure. The Roman armies had very well designed military hospitals. A wounded or sick soldier weakened the fighting strength of the army and therefore had to be cured as soon as possible. Roman landowners had *valetudinaria* for their slaves. To lose a slave was to lose money. To take care of a slave in case of illness was to protect one's capital. Slave labor was becoming rare. Hospitals were erected in India, and a famous inscription of the third century B.C. mentions that King Asoka had erected hospitals not only for sick men but also for sick animals. The guiding motive in this Indian development was the idea of Buddhist compassion.

⁶ E. H. L. Corwin, *Rise of the Hospital Idea*, *Bulletin of the New York Academy of Medicine* 9:125, 1933.

In the early Middle Ages, however, welfare institutions of another kind were erected. They were the result of the Christian attitude towards the sick man. Disease was no longer considered a punishment for sin, no longer a matter that rendered man inferior. Disease and suffering at large gave a privileged position in Christian society. It was considered the duty of the Christian to take care of his sick and poor fellow men. The idea was not merely the humanitarian idea but much rather the idea of the community of the followers of Christ. Whoever joined the Christian church became a member of a definite community comparable to a family. Whenever a child becomes sick the family feels responsible and whenever a member of the Christian family became sick or disabled or poor the head of that family, the bishop, felt responsible and the welfare organization was under his direction. When Christianity became the official religion of the Roman Empire, the community was tremendously enlarged. The care of the sick and poor now became the concern of the whole state, of society at large.

The early welfare institutions in the western world were not hospitals in the modern sense of the word. They were *xenodochia*, guesthouses, poorhouses to provide food and shelter to the poor, to the wanderer and pilgrim. They were often built outside the city wall because it was considered safer not to let the strangers into the city. No medical treatment was given in these places unless incidentally. The monasteries had infirmaries for the sick brothers but did not serve the community.

The second period in the history of the hospital begins in the thirteenth century. The driving force for the development is to be sought in the growth of the cities. The cities became more and more influential in the political life of the nations. The rural districts had to seek the protection of a war lord. The cities, however, became wealthy enough to hire their own soldiers and to defend themselves. They sought, and in many cases, obtained political independence. A city is an infinitely more differentiated and specialized social organism than a rural district. In the cities great wealth and extreme poverty are housed side by side. This is not only the case today but it was the case in the later Middle Ages as well. It was up to the authorities and the wealthy citizens to provide means to care for the indigent and sick. From the thirteenth century on, a great many new hospitals were erected all over the western world. They were founded by the church or by the cities, were often founded by the church and then taken over by the municipal authorities. These institutions were built inside the city walls as an integral part

of the community. In 1204 Pope Innocent III created the hospital of Santo Spirito in Rome, setting a model for many similar institutions. The French cities had their Hôtel Dieu, usually located near the cathedral, open to all creeds and all nationalities.

These new institutions were not yet hospitals in the modern sense of the word either. They were the welfare centers of the cities, containing poorhouses, hospitals for the indigent sick, and infirmaries for old people. It was not only the indigent old people who sought refuge in these places. Many well-to-do citizens, having lost their families, would turn over their entire property to the hospital, purchasing in this way the privilege of being taken care of for the rest of their lives. How often it could happen in those days of relentless war and pestilence that entire families were wiped out and that only some old members of their families survived! They felt lonely and preferred to end their lives in such a hospital. Many of the monumental hospitals that the tourist visits in Italy, Spain, France owed their wealth to this custom. Medical service was given to the sick inmates of the hospital as a rule by the municipal physician, who was the sanitary officer of the city. In quite a few places the municipal doctor was at the same time professor in the medical faculty and on his rounds in the hospital he was accompanied by his students.

In the Renaissance we find an increasing tendency to improve medical service in the hospitals, in quantity as well as in quality. Professor Sudhoff believes that the occurrence of syphilis was, to a certain extent, responsible for this development.¹ Many cities hospitalized their syphilitics, and they did so in order to have them cured in the hospital. The lepers were isolated without medical treatment being given to them. The syphilitic, however, had to be treated, and this required the presence of physicians. From the sixteenth century on, most hospitals provided regular medical service. This service, however, was as a rule insufficient. The living and hygienic conditions of most hospitals were bad, and we find in many descriptions that these old hospitals were much dreaded places. Whoever could afford to be treated at home never went to the hospital. It was a place for the poor, who entered it for their final agony. The city of Angers in the middle of the eighteenth century, eager to develop its textile industry and in order to attract workers, promised them privileges, one of them being that in case of illness, the

¹ Karl Sudhoff "Ein Wendepunkt im Krankenhauswesen des Abendlandes," *Archiv für Geschichte der Medizin* 21: 246-247, 1929.

worker would be hospitalized and would have the right to use one bed all alone by himself⁸

A new period in the history of the hospital sets in in the second half of the nineteenth century. While the driving forces in the previous periods were social forces, it was the progress of medicine and surgery which now called for a new type of hospital. Before the introduction of anesthesia, surgery was limited to a definite number of more or less standardized operations. Anesthesia opened up new horizons to surgery, and asepsis required conditions that could not be provided in the private home. The surgical patients of all classes went to the hospital. In the same way, in medicine, the diagnostic methods became more and more complicated, requiring equipment that had to be provided by the hospital. The specialties made special demands, and the rise of obstetrics brought a new note into the hospital.

Through all these developments the character of the hospital changed fundamentally. It was no longer a place to provide food and shelter for the indigent, no longer an institution in which charity service was given to the sick poor exclusively. From the dreaded place where people went to die, the hospital became a medical center to which the patients of all classes go seeking recovery, a place in which new life is brought to light.

Looking at the American development we will find that the American hospital went through all these phases. The first institutions in the territory of the United States were guesthouses, poorhouses. Such a guest house was erected as early as 1612 in Henricopolis in Virginia on the St. James River. Such a house was Blockley in Philadelphia (1732) and was l'Hôpital des Pauvres de la Charité in New Orleans, organized in 1736, in the same year in which the poorhouse of New York was built. Medical service was given to the sick inmates of such places, but these places did not serve the community at large. They had the same function that the *xenodochia* had in the early Middle Ages.

In the second period real hospitals were founded as places in which medical treatment was given to the indigent sick, the Pennsylvania Hospital in 1752, the New York Hospital in 1791, the Massachusetts General Hospital in 1821. These hospitals were, as a rule, infinitely better than many contemporary European hospitals. In Europe most hospitals were old, and it was difficult to modernize them. America,

⁸ C. Tollef. *De l'Assistance publique et des Hôpitaux jusqu'au XIX^e Siècle*, Paris, 1889.

unhampered by tradition, could avoid mistakes made in Europe. The new hospitals were carefully planned. The men responsible for them went abroad studying the conditions. Their reports are extremely revealing. The new hospitals built in this country in the eighteenth and early nineteenth centuries were greatly admired by European visitors.

The tremendous development of the nation in the course of the nineteenth century, the rapid growth of the population, necessarily led to unsatisfactory hospital conditions. It was not possible to keep step with this development. The hospitals were often crowded and had poor hygienic conditions. Toward the end of the century medical science became such that it required a different standard in the hospital, and so America entered the third period, creating modern hospitals for all classes of the population, centers of diagnostic and therapeutic work. In the readjustment that has taken place in the last decades, great organizations like the American College of Surgeons, the American Medical Association, and many local medical organizations had a definite influence in increasing the number of hospital beds available and in raising the standards.

This development is by no means completed. This history of the modern hospital is short and, as a matter of fact, was started only yesterday. There are still great problems to be solved. One of the chief tasks of the present time is to make the hospital easily available not only to the indigent and to the wealthy patients but to the great mass of the population that has to live on low incomes. Besides, the hospital still has great possibilities of increasing its field of action by including not only diagnostic and therapeutic work but preventive medicine as well.

However, it is not my task today to discuss the future of the hospital. This will be done by the next speakers. What I tried to do was to give a very sketchy outline of the development of the western hospital.

DEVELOPMENTS AND TRENDS IN DENTISTRY

IT may seem presumptuous that a man who is not a dentist and whose only practical experience with dentistry is that of a patient should discuss the present subject. It is the historian's, like the philosopher's, lot that he cannot have practical experience in every field that he is called upon to study and discuss. His task is that of synthesis, and he must approach individual subjects from the background of his general experience. More specifically, the historian's task is to reconstruct the past, to resuscitate what was, and to bring it back to life, so that the past may become an experience to the present, and so that we may be aware of where we came from, where we stand today, and in what direction we are moving.

No art and no craft stands alone in the world. Dentistry is medicine, even if it has emancipated itself and is taught in separate schools. Like medicine, dentistry is an essential health service to society. The task of physician and dentist is the same: to keep fellowmen adjusted to their

.....
One of Dr. Sigenist's great skills was to be able to apply his vast over all knowledge of the history of medicine to the interests of special groups. Here he traces the background of dentistry and speculates on possible reasons for its emergence as a separate profession. The lecture was presented on the occasion of the seventy-fifth anniversary of the founding of the Missouri Dental College in St. Louis. The paper was published in the *Washington University Dental Journal* 7:131-141, May, 1941.

environment as useful members of society and in full control of their physical and mental capacities. Or it is to readjust them through treatment when prevention has broken down and disease has taken hold of them. The same basic pathological processes affect the organs of the mouth that affect other organs. Like medicine, dentistry progressed as a result of a developing science. To the patient a disease of the teeth is an experience like other diseases. And in both fields it is not enough to have scientific knowledge, but we must be able to apply whatever knowledge we have to the people. Success or failure of our work will be largely determined by the willingness and ability of society to accept our advice.

If we wish to understand the development of dentistry, we must therefore be familiar with the history of medicine and that of society. And it is from this angle that I would like to approach the subject, endeavoring to show you that the same trends that affected medicine and society reflected themselves in dentistry also. Please do not take my remarks as authoritative statements. I am a layman in the field of dental history. Accept them rather as the impressions of a medical historian who looks at dentistry.

We know that disease is as old as life itself. Long before the advent of man, animals suffered from pathological processes. Medicine is as old as man. Instinctively, an individual rubbed an injured extremity, pulled a thorn from the flesh, or applied heat or cold to alleviate pain. Dentistry is just as old as medicine. Traces of dental caries were found in cave bears, of pyorrhea even earlier in fossil reptiles. And among humans sick teeth were found in skulls of the fifth millennium B.C. in Egypt. Where there were sick teeth, there was pain. Pain is one of the chief symptoms of disease, and a toothache was always one of the most spectacular pains. Where pain was felt help was sought, and physical pain was always the domain of the physician whether he was a shaman, a priest, a craftsman, or a scientist. He was called upon to help alleviate a pain that made life unpleasant or even unbearable, whether this pain resided in the teeth or in some other part of the body. This is why medicine and dentistry were one. Wherever we find old medical texts, be they papyri or clay tablets, we always find indications as to the treatment of diseased teeth.

When we look at the development of dentistry as a whole, it strikes us that progress was achieved very late. The Greek surgeons were extremely experienced in surgery of the bones and performed even major

operations. Greek and Arab surgeons did not hesitate to perform very delicate operations on the eye. Why did dentistry develop so slowly, why so much more slowly than ophthalmology? What was the retarding factor? It seems to me that one such factor was that dental diseases were not taken too seriously. They were a nuisance, to be sure, and painful while they lasted, but they did not kill. They did not threaten a man's life. Once a tooth was out, the disease was gone and the pain soon forgotten. Teeth did not appear necessary to life, and once the last tooth was gone a man's dental problem had come to an end.

When we look at caricatures by seventeenth century satirical artists, we find that the dentist extracting a tooth from an unfortunate victim was a favorite subject. The distortions of the patient's face reveal that he is suffering excruciating pain, probably the most atrocious acute pain a man can suffer. Why was such a scene considered amusing? I think it is the discrepancy between the terrific pain and the relative harmlessness of the condition that creates the comic situation. The same is true of the patient suffering from an attack of gout, where the comic situation is enhanced by the fact that the disease used to be attributed to an abuse of wine, women, and song. No satirical artist would picture a man suffering from an attack of angina pectoris, because this pain is different. It signalizes a disease that kills.

The general underestimation of the significance of teeth for the general health of the individual undoubtedly was a retarding factor. But there were also factors that accelerated the development of at least one field of dentistry. One such factor was the esthetic valuation of the teeth. A set of good teeth was always considered a great attribute to beauty that added strongly to the sex appeal of a person. If we look at the posters around town, we find that the many Chesterfield, Camel, and gasoline girls all have perfect teeth. This is why even savage tribes cultivated and polished their teeth or decorated them with gold, silver, or precious stones. We know exactly how highly valued teeth were in ancient Babylonia. The Code of Hammurabi, written around 2000 B.C., tells that a man who destroyed a plebian's eye was fined one mina of silver and one who knocked out a plebian's teeth had to pay one third that price, one-third mina. The eye undoubtedly was one of the most highly valued organs. Wherever skilled goldsmiths could be found, as among the Etruscans, Phoenicians, and Greeks, loose teeth were fastened with gold and silver wire. Lost teeth were replaced by somebody else's or animal teeth that were attached with bridgework. We must keep

in mind, however, that these prostheses served a purely cosmetic purpose and were frequently removed before eating. It was not the physician's task to make them, but that of other craftsmen.

Dentistry followed very closely the course of medicine. It was part of it. In the religious medicine of Babylonia, diseases were frequently attributed to the noxious influence of demons who took possession of a man's body. Magical causes were also sought for the explanation of dental diseases. This view was sometimes rationalized when disease was attributed not to an evil spirit but to a worm. The worm that gnaws at the root of the teeth was exorcised, and one such text is particularly interesting since the incantation contains a complete cosmogony:

When Anu created the heavens,
 The heavens created the earth,
 The earth created the rivers,
 The rivers created the brooks,
 The brooks created the swamp,
 The swamp created the worm,
 The worm went crying to Shamash,
 Shedding his tears to Ea:
 "What shall you give me to eat?
 What shall you give me to drink?"
 "I give you ripe figs and cider—"
 "What shall I do with ripe figs and cider?
 Take me up and let me reside between teeth and gum,
 The blood of the teeth I will drink,
 The roots of the gums I will eat."
 "Because thou sayst that, worm,
 May Ea strike thee with his strong hand."

Teeth were also treated with drugs in Babylonia and were extracted, as they also were in the much more sober Egyptian medicine. The Egyptian papyri mention sick teeth not infrequently, and the surgical Papyrus Edwin Smith describes a method of draining the pus of an abscessed tooth. Among the many specialists of Egyptian medicine were also those who specialized on teeth.

Keen observation of disease symptoms is characteristic of the Greek physicians, who not only saw and described symptoms but also endeavored to coordinate them, thus establishing disease pictures. From the Hippocratic writings on, Greek medical literature is full of passages relating to the teeth and their ailments. Their origin was not explained in a magic way, but following the pathological theories of the

time. The cardinal humor, phlegm, was frequently made responsible for dental diseases. Phlegm was the humor that caused inflammation, so that many dental illnesses were considered as being of an inflammatory character. The treatment was dietetic, pharmacological, or surgical, but as a rule teeth were not pulled before they were loose.

Taken as a whole, ancient dentistry was not highly developed. Its standard was lower than that of most other medical specialties. The natural end of a sick tooth still was to become loose and to be removed. The Middle Ages added little to Greek views. The many antidotaria all have prescriptions *ad dentium dolorem*, *ad dentes si laxi fuerint*, etc. The drugs prescribed were those of Greco-Roman pharmacology. The Arabs cauterized sick teeth frequently. Their medical books, like those of the western world, all contain instructions concerning teeth, but little was added to ancient knowledge.

Throughout the Middle Ages dentistry was a matter of the surgeons, which was all to its benefit. The physician trained in universities was a scholar who did not work with his hands. The surgeon was a craftsman, educated as such and much closer to the people than the physician. In the continental European cities the barber-surgeon was frequently owner of a bathhouse where people came regularly for a steam bath, for having their hair attended to, and for the treatment of skin diseases. The barber-surgeon was an expert in cosmetics, was the beautician of the medieval town. He was expert in dentistry also, and there must have been surgeons who made the treatment of teeth their specialty, the *dentatores* or *dentistae* as Guy de Chauliac calls them in the fourteenth century.

The Renaissance was the beginning of a new period in the history of western medicine. There was a strong trend toward realism. The foundation of a new descriptive human anatomy was laid by Vesalius, and the anatomists of the day did not neglect the organs of the oral cavity. Leonardo described and pictured the maxillary sinus long before Highmore. In 1574 the anatomist Eustachius wrote a *Libellus de Dentibus*. He complained that dental surgery was on a very low standard in his day ("est sane vero Dentium Chirurgia hac aetate vilissima"). He knew that, if surgery was to improve, the anatomy of the teeth must be better known, and this was why he wrote his book.

During the Renaissance, monographs were written on certain groups of diseases. Thus the great physician Girolamo Fracastoro wrote in 1546 his classical book on contagious diseases. At that time, in 1530, the first

dental monograph, the so-called *Zene Artzney*, was published. It was not an original work but a compilation written for the benefit of the people, and it was so popular that fourteen editions were issued between 1530 and 1576. In the same century, in 1583, a similar popular book was written on ophthalmology, the *Ophthalmodouleia* of Georg Bartisch, which was also written in German.

The technical development of the Renaissance became a stimulus to surgery. Ambroise Paré was the greatest representative of the period. A skillful surgeon and fearless experimenter, he did not neglect the field of dentistry. He cauterized caries and improved the methods of extraction. Loss of teeth, according to him, did not only disfigure a person but affected his speech. He was anxious, therefore, to improve dental prostheses, for which he used bone or ivory. His dentures, however, still could not be used for chewing.

In the seventeenth century a new physiology was born, based on anatomy and using the experiment as the method of research. The microscope opened up new horizons to the anatomist, and embryological studies were keenly pursued. When we read the books written at the period we find that every book on embryology discussed the development of the teeth. Gabriel Philippe de la Hire studied the microscopic structure of the teeth, and the iatrophysicists studied the physiology of the organs of the oral cavity.

In 1728 Pierre Fauchard, justly called the Father of Dentistry, published his classical book *Le Chirurgien Dentiste*. Two hundred years had passed since the publication of the first dental monograph, the *Zene Artzney*, and the difference between the two books is tremendous indeed. Here we must raise the question why the father of dentistry was a Frenchman and why he lived in the beginning of the eighteenth century. The answer is easy to give. France at that time was leading in surgery, a field that was better organized there than anywhere else. From 1699 on, a license was required in France for the practice of dentistry. At that time other surgical specialties were established. In 1741 Nicolas Andry published his *L'Orthopédie ou l'Art de Prévenir et de Corriger dans les Enfants les Difformités du Corps*, a book that was to orthopedics what Fauchard's book was to dentistry. Fauchard, moreover, was for a number of years a naval surgeon, and in those days of scurvy a naval surgeon could not but become interested in the teeth.

Fauchard was by no means alone. Dentistry progressed in other countries also. Philipp Pfaff, dentist in ordinary to Frederick, King of

Prussia, was an able dental surgeon too. And in England John Hunter advanced the anatomy, physiology, and pathology of teeth more than anybody else. Hunter was not only a great surgeon and anatomist. His most valuable contribution consisted in making the wide field of surgery, the surgeon's experience in surgical diseases, available to general pathology.

The great hygienic movement that developed during the eighteenth century under the influence of the philosophy of enlightenment included dental hygiene. Books and journals were published to educate the public in matters of health. I cannot resist the temptation to quote a few paragraphs from one of the most popular of such books, the *Catechism of Health* of Bernard Christoph Faust. It was first published in German in 1794, was immediately translated into English, and printed twice in America, in Boston in 1795, in New York in 1798. It is a catechism written in simple queries and answers for the education of children and their parents. The passage relating to teeth is the following:

QUESTION 267 *Are there no other parts of the body which man should take particular care in preserving?*

ANSWER Yes, his teeth, for the teeth are not only necessary to assist us to pronounce distinctly, but for chewing also, and on the proper chewing of our food depends, in a great measure, digestion, and the nourishment, health, and prosperity of mankind.

QUESTION 268 *How are the teeth injured?*

ANSWER By much fluid aliment, by coffee, tea, and other warm slops used instead of cold water, by corrupted air in apartments, by uncleanness, by the use of tobacco, by bits of food, particularly meat, sticking between them, by hot meats and liquors, by filling the mouth alternately with hot and cold things, by biting hard substances, and picking our teeth with knives, forks, pins, and needles, all which practices are highly injurious to them.

OBSERVATION

Nobody should put pins or needles in their mouth, they may easily be swallowed and cause death. In general it would be well to make as little use of pins, even in dressing as possible.

QUESTION 269 *By what means are the teeth preserved sound?*

ANSWER By the early habit of properly chewing our food, by drinking cold water, by breathing pure air, and eating cold or tepid aliment, and drinking no warm liquors at all, by cleaning the teeth after each meal, either by drinking or gargling the mouth, and by refraining from picking of them, all this is necessary to keep the teeth sound and beautiful.

QUESTION 270 *By what means are the front teeth preserved sound?*

ANSWER By constant use, and the chewing particularly of dry substances, as bread, etc

OBSERVATION

Children are not to cut with a knife the bread that has been handed to them, but to break it with the teeth and chew it

QUESTION 271 *Should children also preserve their milk teeth?*

ANSWER By all means, for the lasting teeth, which are hid by them, are injured if the milk teeth are not kept sound by much chewing

QUESTION 272 *If the teeth be not kept sound from childhood, and are injured, can they be restored to their original state?*

ANSWER No that cannot be done, but through cleanliness, chewing, pure air, and cold water, injured teeth may be preserved from further injury

QUESTION 273 *What are the best remedies to prevent tooth ache?*

ANSWER Chewing drinking of and gargling with cold water, pure air, cleanliness of the mouth keeping the head cool, bathing the face, after rising in the morning, and before going to bed, in cold water.

Progress was undoubtedly made in dentistry during the eighteenth and early nineteenth centuries, but it was very slow even then. At the time when the French clinic flourished, when Corvisart and Laennec developed modern clinical medicine and a surgeon like Larrey showed astounding surgical skill, dentistry was still on a relatively low standard. Why? For various reasons. Dentistry required great manual skill that the physician as a rule did not possess. The dentist, therefore, was a surgeon, and where no license was required for the practice of dentistry he was often not a surgeon but a crude craftsman or even a quack. For centuries medicine and surgery had been separate professions. Medicine became increasingly scientific while surgery remained a craft. In the nineteenth century medicine and surgery came together. Surgery became scientific also. The surgeon was a physician who specialized in the operative treatment of diseases, in an ever widening field. Dentistry was left out and did not become a surgical specialty like ophthalmology or orthopedics. The importance of the teeth for the individual's health was still underestimated. The teeth were looked upon as an organ that was incapable of self repair, an organ, moreover, the loss of which could be replaced artificially. This was the view of the physicians, and it was accepted by society. I still remember the days in Europe when a peasant girl before marrying had her last teeth extracted and received as a precious wedding gift a set of artificial teeth.

Since dentists were left out in this general development, they were forced to act for themselves, and they did. America took the lead. In 1840 the first dental college was founded in Baltimore, and seventy-five years ago the Missouri Dental College was organized, the anniversary of which we are celebrating today. This independent development undoubtedly benefited the technical side of dentistry. It was perhaps not quite so good for its scientific development. But then the colleges became departments of universities. It gave them university standards and brought dentistry closer to medicine.

During the last fifty years, under American leadership, dentistry made unheard-of progress. It received from medicine and contributed to it. It received from medicine results of research in physiology, pathology, bacteriology, the theory of oral sepsis, and as a most precious gift the X-ray which medicine itself had received from physics. It gave to medicine highly developed techniques for the preservation and cure of an important organ and contributed substantially to the introduction of general anesthesia. Again it is not by accident that dentists played a prominent part in the development of anesthesia. They were, in their daily practice, faced with terrific pains and handicapped by them. More than anybody else, they were eager to eliminate pain and the defense reactions of the patient.

Dentistry still has unsolved problems. The major diseases, caries and pyorrhea, have not yet been fully elucidated, and the solution of these problems will require still more research and the cooperation of all medical scientists.

Dentistry shares with medicine today one great unsolved problem, that of its sociology. In dentistry, as in medicine, the technology has far outstripped the sociology. Dentistry, like medicine, has infinitely more to give than the people actually receive. We know how to prevent and how to cure many diseases, but we still have them with us. Dentistry is better prepared than any medical discipline to practice prevention on a large scale. But how many people actually have regular prophylactic treatments? Tens of thousands of people are sick and disabled as a result of dental neglect. Nobody will deny that health conditions have greatly improved. Life is infinitely less hazardous than it was only yesterday. The life expectancy has greatly increased. But we all agree that health conditions are not as good as they could be. There is still an enormous amount of unnecessary illness, and many people still die. It is true for the general health conditions applies

to the dental situation also. It is too early to draw far-reaching conclusions from the examination of the draftees, but whatever figures have been made known so far reveal clearly that the dental problem of the country is far from having been solved.

The causes of this maladjustment are not difficult to find. The progress of dentistry, like the progress of medicine, has increased the cost of the caries to a point where it becomes unavailable to a large section of the population. Free clinics have been built, school dental services have been established, and many public health programs include dental care. Important as all these services are, they cannot possibly reach all the people who need them.

Another factor in the situation must not be overlooked. While medicine and dentistry progressed, the structure of society underwent considerable changes as a result of increasing industrialization. Today the majority of all gainfully employed persons are wage earners or salaried employees who depend for a living on the labor market, have a job today but may lose it tomorrow. All this calls for the organization of medical and dental services, for a system that will make it possible to bring all that science has to give in medicine and dentistry to all the people. Such a system combined with a rising standard of living will improve health conditions more than ever before. This, however, requires not only scientific but also economic and sociological research.

The United States has natural resources and resources in highly skilled manpower such as no other country possesses. American dentistry has been leading for one hundred years. American medicine has assumed leadership in the last twenty-five years. America, therefore, is better prepared than any other country to set an example to the world in the field of social medicine also. Just in a period of emergency when we are forced to attend to the immediate task first, we must take the long view of things. We must prepare not only for today but also for tomorrow. In the fulfillment of this task, dentistry and the dental schools have a great part to play.

Let me end by thanking you most cordially for your invitation, and by telling you what a joy and inspiration it is for a historian to be present on such a memorable day, when the past is being recorded and the future is being prepared.

WAR AND MEDICINE

I MUST begin by confessing that I am not an expert in this particular field of medical history. My researches have been along somewhat different lines, although I have touched the history of war surgery in several previous publications.¹ Men like Colonel Fielding H. Garrison² and Colonel Edgar E. Hume³ have made infinitely more important contributions on which I will have to draw heavily. I am, however, extremely interested in the subject because directly or indirectly wars have played a very important part in the development of medicine, and also because during the last war I was an army physician myself. Since the subject is very broad, I must limit myself to tracing briefly the development.

War's contribution to medicine is, first of all, negative. It destroys

.....
At the height of the second World War, everyone was naturally interested in the relations of war to medicine. How did wars influence medicine, and how has medicine affected the outcome of wars? In this paper, Dr. Sigerist attempted to answer these questions in a brief way. The paper was read before the Washington, D.C., Academy of Medicine on April 22, 1942. The paper was published in the *Journal of Laboratory and Clinical Medicine* 28 531 538, February, 1943. It was reprinted in *Centaur* 19.211 217, March, 1944.

¹ *The Book of Cirurgia*, by Hieronymus Brunschwig, with a study on Hieronymus Brunschwig and his work by Henry E. Sigerist, Milan, 1923, Ambrose Paré, *Die Behandlung der Schusswunden*, eingeleitet, übersetzt und herausgegeben von Henry E. Sigerist, Leipzig, 1923.

² "Notes on the History of Military Medicine," reprinted from *The Military Surgeon*, 1921-1922, Washington, D. C., 1922.

³ *Medical Work of the Knights Hospitallers of Saint John of Jerusalem*, Baltimore, 1940, and many other publications.

conducive to health. Already the number of industrial accidents has increased, and we may also expect an increase in the incidence of tuberculosis, which is likely to happen when large numbers of women are drawn into industry. Under normal conditions industrial expansion would call for added medical facilities, but under war conditions the demand cannot be satisfied because the armed forces absorb a high percentage of the available medical personnel and equipment. Thus a vicious circle results which can only be offset by a thorough organization of all medical resources in a way that guarantees maximum efficiency and minimum waste.

There can be no doubt that the major immediate contribution of war to medicine is negative. War is a destructive process which destroys what medicine has endeavored to build. But war, on the other hand, is also a challenge and a stimulus to medicine, both technically and socially. Medicine is always facing a condition of emergency, because in the fight against disease there is no armistice. War, however, is an emergency of a particular kind which puts a nation's medical resources to a severe test. It also provides opportunities for experimentation on a tremendous scale such as would never be available in times of peace.

Of all branches of medicine, surgery obviously is the one which at all times responded to the war challenge most strongly and in various ways. Armies travel and with them go the army surgeons. They meet colleagues from foreign lands and exchange experiences. This already happened in ancient Greece when Greek surgeons traveled with the mercenaries who were in the army of the Egyptian pharaoh Psammetich. They probably learned from their Egyptian colleagues, which may explain the fact that similar operations are described in the Egyptian and Greek surgical literature. Surgery is not only transmitted through books but, first of all, in a practical way, with experience being passed on from father to son, from master to pupil. In this process of transmission wars must have played a very important part.

War was also responsible for the erection of hospitals in ancient Rome. The Greeks never had hospitals in our sense, physicians sometimes took a few patients into the guest rooms of their workshop, the *iatreion*, but these were certainly not regular hospitals. In Rome, however, practical considerations led to the establishment of special institutions for the care of certain groups of sick people. Every soldier was a fighting force, and it was in the interest of the army to restore the wounded as quickly and as thoroughly as possible. Lazarettos were,

therefore, built, and the foundations of several of them have been excavated, particularly in the periphery of the Empire. Some of the like the one in Novaesium, were very elaborate institutions with many sickrooms opening into large corridors built around a vast courtyard. The military hospital in Baden, in Switzerland, was close to a sulfur spring and extensive use was made of the medicinal water in the treatment of the wounded.

War, or rather the lack of war, caused the establishment of another kind of Roman hospital, the slave *valetudinaria*. Slaves were cheap as long as wars guaranteed a steady stream of prisoners. But the value of slaves increased considerably once the empire was pacified, and it then became profitable to spend money for the restoration of the slaves' health. Thus slave hospitals were erected on the large estates of Roman landowners.

Until the fourteenth century most war wounds were caused by sword, spears, arrows, and similar weapons. They, as a rule, healed by first intention, and in the writings of thirteenth century surgeons wound healing without suppuration was considered the normal process that a physician should strive to attain whenever possible. Conditions changed when firearms were introduced in the fourteenth century. The wounds caused by the large caliber lead bullets of those days were primarily infected, and the view was generally accepted that gunshot wounds were poisoned by gunpowder and had to be treated with the cautery or by pouring boiling oil into the wound. It is well known how a military surgeon, Ambroise Paré, the father of modern surgery, refuted this view on the basis of experiences gained on the battle fields during one of the campaigns of Francis I against Charles V. He proved experimentally that gunshot wounds healed much better without the brutal treatment that destroyed so much of the tissues. But even to Paré suppuration appeared as the normal wound-healing process. Paré's treatise on the treatment of gunshot wounds was published in 1545 and revolutionized war surgery. Thereafter he published a large number of other surgical books, and frequent campaigns in which he participated gave him an opportunity to test his operations on a large scale. He reintroduced the ligation of arteries when performing amputations, was also a pioneer in the field of obstetrical operations, and exerted a tremendous influence in the whole field of surgery.

* Theod. Meyer-Steineg, *Kranken Anstalten im griechisch-römischen Altertum*, Jena, 1912, Jenaer medicin. historische Beiträge, Heft 3.

When John Hunter took part in the expedition to Belle Isle in 1761, the British navy availed itself of the services not only of a surgeon but also of a scientist. On this expedition Hunter gained invaluable experience on gunshot wounds, a subject that he studied all his life and which he finally discussed in his masterpiece, *A Treatise on the Blood, Inflammation and Gunshot Wounds*, which was published in 1794 soon after his death. In those days, most surgeons were still craftsmen who were primarily interested in the practical side of surgery. Hunter was a surgeon also but a scientist in addition. For him a wound was something more than a practical problem. He was not content to ask, "How can I best heal this wound?" He inquired, "What does the wound signify to the organism? By what mechanisms does the organism safeguard itself against the effects of the wound, immediate and remote?" In this way, almost imperceptibly he passed from the domain of surgery into that of pathology. The main significance of his work was that he threw open the field of surgical observation and experiment to general medicine. He was the first investigator since the days of antiquity to advance the theory of inflammation, and there can be no doubt that Hunter's war experience had a great influence on his later researches.

Until the middle of the nineteenth century, the field of surgery was limited to a number of classical operations which had been gradually improved from century to century. Major abdominal surgery was impossible as long as one could not operate on the relaxed body, and also on account of pain and secondary infection. The introduction of general anesthesia in 1846, and of antiseptics in 1867, when Lister's first publications came out, liberated surgery from these age-old bonds. Both methods were immediately applied in war surgery and undoubtedly helped to save thousands of human lives. In 1846 Warren performed his historic operation at the Massachusetts General Hospital, while Morton gave the anesthesia, and the following year Syme applied general anesthesia in the Mexican War and Pirogov did the same in Russia. In 1867 Lister published his first papers, and a few years later the Franco-Prussian War provided an opportunity to apply and test the antiseptic treatment of wounds on a large scale and to gain much experience in the field. The German surgeons Volkmann, Thiersch, and Mikulicz were particularly active in developing and popularizing the method.

The Franco-Prussian War also became the testing ground for the efficacy of smallpox vaccination. In the German army, where most soldiers were vaccinated and revaccinated, 4800 cases of smallpox occurred

with 278 deaths, while among the unvaccinated French prisoners alone 14,000 cases occurred with 2000 deaths.

All fields of medicine felt the challenge of war, surgery more than any other, but also public health was stimulated. Problems of sanitation were particularly acute in times of war, and in the seventeenth and eighteenth centuries many books were written on the sanitation of camps and barracks and on general problems of military hygiene. In 1738 a great soldier, the Maréchal de Saxe, wrote a book with the title, *Réveries ou Mémoires sur l'Art de la Guerre*. It was the result of thirteen nights of insomnia when he was suffering from a fever disease, not a textbook on strategy but a thoughtful book on military hygiene. Uniforms were more spectacular than convenient. They were devised to satisfy the vanity of the ruler and to make the soldiers attractive to the fair sex as a compensation for the professional risks they ran. The Maréchal de Saxe advocated a different type of uniform better adapted to the purpose they had to serve. He also gave much thought to the soldiers' diet. Long before Liebig, in the middle of the eighteenth century, meat extracts were prepared to feed soldiers during campaigns.*

War had repercussions not only on medical science but also on the humanitarian side of medicine. Florence Nightingale would have become the reformer of nursing without a Crimean War, but there can be no doubt that the experience she gained at Scutari in those terrible years 1854 to 1856 accelerated developments tremendously. October 21, 1854, the day when she left England with thirty-eight nurses, truly marks a turning point in the history of nursing. Placed all of a sudden under conditions of great emergency, Florence Nightingale saw and did more in less than two years than she could have done in a lifetime in England. The Crimean War thus actually became the cradle of modern nursing, just as the Battle of Solferino in 1859 became the starting point of the Red Cross. The Geneva banker, Henri Dunant, who was visiting Italy as a tourist, suddenly found himself on the battlefield of Solferino and was so stirred by what he saw that he devoted his entire life to the alleviation of the sufferings of the wounded and prisoners of war. In October, 1863, sixty-two delegates representing sixteen nations convened at Geneva, and the Red Cross Society was founded the following year. As we all know, it has extended its scope far beyond war activities and in every country is playing a tremendous part in relieving human suffering.

* Cabanis, *Chirurgiens et Médecins à l'armée Française*, Paris.

Ambroise Paré and John Hunter, whom we mentioned before, served as army surgeons, but only occasionally. Paré was surgeon in ordinary to several French kings, and it was obvious that he accompanied them whenever they went to war, but otherwise he practiced surgery as a civilian in Paris. John Hunter's military period was only an episode in his life, although an important one. Great contributions have been made to medical science, however, by medical men for whom the army was a career, and there can be no doubt that no medical corps in the world has done more for the advancement of science than that of the United States Army. It is impossible to list all these contributions, and all I can do is to recall a few names: Beaumont, who experimented in the wilderness on the gastric juice; John Billings, whose contribution to hospital construction, medical education, vital statistics, and the development of libraries has been unsurpassed; the heroic work on yellow fever of Sternberg, Reed, Carroll, Lazear, Agramonte; Gorgas whose activities extended far beyond the Panama Canal and who was instrumental in organizing medical services in the gold mines of South Africa; Ashford's studies on hookworm, Craig's on malaria, Woodward's on photomicrography. Colonel Hume has recently shown in a scholarly publication what great contributions army surgeons made to the science of ornithology.⁷ There is hardly a field of general or medical science that has not been enriched by members of the United States Army Medical Corps, and the Army Medical Library in Washington with its splendid collections and bibliographies is a unique institution that has played an important part in the development of American medicine.

There is one thing we can learn from history, namely, how tremendously important the medical corps is. There was a time not so long ago when the generals used to consider the medical officer a nuisance, the man who always interfered with their dispositions. They forgot how many campaigns were lost in spite of brilliant strategy as a result of diseases. Views are changing rapidly, and the war departments are recognizing the need for mobilizing all the resources of medical science.

Medicine learned from every war, and the more science progressed the more medicine became able to save human lives even in war. The soldiers who today are sent to foreign lands are immunized against many once-fatal diseases; they are nourished scientifically, and they carry along the vitamins needed to protect them from deficiency diseases. They are

⁷ *Ornithologists of the United States Army Medical Corps*, Baltimore, 1942.

clothed infinitely more hygienically than in the past. Operative results have been greatly improved, and the new methods of blood transfusion are saving countless lives. The great progress achieved by orthopedics makes it possible to rehabilitate the wounded infinitely better than in the past. In previous centuries little attention was paid to crippled war veterans. A few were assigned to the care of monasteries, but the great majority became beggars roaming the streets. It was Louis XIV in France who established the *Hôtel des Invalides* in Paris, an institution in which invalid veterans were attended at the expense of the state.

The rehabilitation of the crippled veterans is one of the most important social problems of war medicine today. Pensions alone do not solve the problem. Work is one of the major balancing factors of health, and there is plenty of skilled labor that can be performed by blind and maimed veterans. Every effort must be made to readjust the invalid to his environment so that he can continue to live as a useful member of society and thus preserve his self respect. The Soviet Union is handling the problem in an admirable way. Special schools have been established for the purpose, giving general and vocational training in courses that may last as long as two years. Invalids who had only elementary education may improve their general knowledge by taking courses of secondary education. Vocational training produces bookkeepers, technicians, agricultural experts, tailors, photographers, telegraph operators, etc. The Commissariats of Social Welfare are in charge of rehabilitation programs. Local social welfare bodies must place invalids within two days, and all industrial and other enterprises are urged to provide suitable work and housing for the veterans, who are visited by special commissions every month.

War is not a natural catastrophe or a biological process, as has sometimes been said. It is man made and represents a primitive method of conducting international politics. Civilization is a very young phenomenon in the history of mankind, so that we should not be astonished that relapses into primitive savagery still occur. There is no reason, however, why we should not be able to develop in the course of time from a competitive to a cooperative society on a world wide scale. As long as wars occurred they always had definite results that affected social and economic conditions of the countries involved in a way that was either detrimental or beneficial to the development of medicine.*

* Milton I. Roemer, "History of the Effects of War on Medicine," *Annals of Medical History* (third series) 4:189, 1942.

Ambroise Paré and John Hunter, whom we mentioned before, served as army surgeons, but only occasionally Paré was surgeon in ordinary to several French kings, and it was obvious that he accompanied them whenever they went to war, but otherwise he practiced surgery as a civilian in Paris. John Hunter's military period was only an episode in his life, although an important one. Great contributions have been made to medical science, however, by medical men for whom the army was a career, and there can be no doubt that no medical corps in the world has done more for the advancement of science than that of the United States Army. It is impossible to list all these contributions, and all I can do is to recall a few names. Beaumont, who experimented in the wilderness on the gastric juice, John Billings, whose contribution to hospital construction, medical education, vital statistics, and the development of libraries has been unsurpassed, the heroic work on yellow fever of Sternberg, Reed, Carroll, Lazear, Agramonte, Gorgas whose activities extended far beyond the Panama Canal and who was instrumental in organizing medical services in the gold mines of South Africa, Ashford's studies on hookworm, Craig's on malaria, Woodward's on photomicrography. Colonel Hume has recently shown in a scholarly publication what great contributions army surgeons made to the science of ornithology.⁷ There is hardly a field of general or medical science that has not been enriched by members of the United States Army Medical Corps and the Army Medical Library in Washington with its splendid collections and bibliographies is a unique institution that has played an important part in the development of American medicine.

There is one thing we can learn from history, namely, how tremendously important the medical corps is. There was a time not so long ago when the generals used to consider the medical officer a nuisance, the man who always interfered with their dispositions. They forgot how many campaigns were lost in spite of brilliant strategy as a result of diseases. Views are changing rapidly, and the war departments are recognizing the need for mobilizing all the resources of medical science.

Medicine learned from every war, and the more science progressed the more medicine became able to save human lives even in war. The soldiers who today are sent to foreign lands are immunized against many once fatal diseases; they are nourished scientifically, and they carry along the vitamins needed to protect them from deficiency diseases. They are

⁷ *Ornithologists of the United States Army Medical Corps*, Baltimore 1942

clothed infinitely more hygienically than in the past. Operative results have been greatly improved, and the new methods of blood transfusion are saving countless lives. The great progress achieved by orthopedics makes it possible to rehabilitate the wounded infinitely better than in the past. In previous centuries little attention was paid to crippled war veterans. A few were assigned to the care of monasteries, but the great majority became beggars roaming the streets. It was Louis XIV in France who established the *Hôtel des Invalides* in Paris, an institution in which invalid veterans were attended at the expense of the state.

The rehabilitation of the crippled veterans is one of the most important social problems of war medicine today. Pensions alone do not solve the problem. Work is one of the major balancing factors of health, and there is plenty of skilled labor that can be performed by blind and maimed veterans. Every effort must be made to readjust the invalid to his environment so that he can continue to live as a useful member of society and thus preserve his self respect. The Soviet Union is handling the problem in an admirable way. Special schools have been established for the purpose, giving general and vocational training in courses that may last as long as two years. Invalids who had only elementary education may improve their general knowledge by taking courses of secondary education. Vocational training produces bookkeepers, technicians, agricultural experts, tailors, photographers, telegraph operators, etc. The Commissariats of Social Welfare are in charge of rehabilitation programs. Local social welfare bodies must place invalids within two days, and all industrial and other enterprises are urged to provide suitable work and housing for the veterans, who are visited by special commissions every month.

War is not a natural catastrophe or a biological process, as has some times been said. It is man made and represents a primitive method of conducting international politics. Civilization is a very young phenomenon in the history of mankind, so that we should not be astonished that relapses into primitive savagery still occur. There is no reason, however, why we should not be able to develop in the course of time from a competitive to a cooperative society on a world wide scale. As long as wars occurred they always had definite results that affected social and economic conditions of the countries involved in a way that was either detrimental or beneficial to the development of medicine.⁸

⁸ Milton I. Roemer, "History of the Effects of War on Medicine," *Annals of Medical History* (third series) 4:189, 1942.

The campaigns of Alexander the Great propagated Greek culture all over the ancient world and created conditions favorable to the development of medicine in such countries as Egypt and Syria. The Roman conquest of western Europe pacified the Germanic tribes, developed trade, and permitted cultural developments that also benefited medicine. Persian medicine flourished as never before after the Arabic conquest, and Persia became an important province of Islamic civilization.

The Thirty Years' War, on the other hand, was a strongly retarding factor not only on account of the destruction it brought all over central Europe but also because it perpetuated feudalistic trends. The emergency created by the revolutionary wars of France greatly accelerated the reorganization of medicine initiated by the revolutionary government. The reforms were continued by Napoleon and became the foundation upon which the French school developed and flourished. The Franco-Prussian War liberated France from the rottenness of the Second Empire and led to the establishment of the Third Republic under which science and medicine reached great heights. The World War of 1914-1918 stimulated medical science in many ways as we all remember. Yet the contribution of that war to medicine was probably still greater in the field of social medicine. The war had demonstrated the importance of protecting the workers' health, and industrial medicine developed as never before. Workmen's compensation was introduced in a number of countries and general health insurance in France. Various countries established ministries of health, and the Soviet Union made a totally new departure in creating the type of medical organization best adapted to the new industrial society and the new technology of medicine.

In the United States the examination of almost three million drafted men revealed that forty-seven per cent were defective, in other words, that health conditions were not as good as they could have been and that there was a maladjustment in the distribution of medical care. The Committee on the Costs of Medical Care was founded. Other agencies joined in the work, and for ten years surveys were made that provided us with the facts and figures needed for intelligent planning.

The war in which we are engaged at present will undoubtedly again stimulate medical science, but I am convinced that its social effects will be much more strongly felt. It would be foolish to assume, as some people do, that Europe is finished. Europe is going through one of its periodic crises, and the very destruction will force the European nations to reorganize their social and economic structure from the bottom. Thus

conditions may well be created that will enable medicine to develop more rapidly and more broadly than in the past.

The war is demonstrating to us that our technology has outrun our sociology. We have created ingenious machines but not the social and economic organization that an industrial society requires. We have built means of transportation that overbridge the continents but not the apparatus that ensures peaceful cooperation between nations. The same happened in medicine, and now, under pressure of the emergency, we have to organize medical services not only for the armed forces but for the nation. If we learn a lesson from this experience, it may well become this war's greatest contribution to medicine.

NATIONALISM AND INTERNATIONALISM IN MEDICINE



LADIES and gentlemen: I feel greatly honored to have been invited to address the oldest medical society of colored physicians established in this country, although I deeply deplore that you were forced to create your own organization instead of being able to join hands with the white doctors of the capital in the common fight against disease. In no country is there more talk about democracy than in ours and no country is more eager to educate other nations in the principles of democracy, but when it comes to the practice of these principles at home we are sadly deficient and tolerate discrimination against fellow citizens on racial or religious grounds.

It is an honor to deliver a lecture named after a courageous man, Senator Charles Sumner of Massachusetts, who after the Civil War, when three qualified Negro physicians were refused admission to the medical society of the capital, did everything in his power to have enacted what-

.....

Always a foe of bigotry, Dr. Sigerist welcomed the invitation to address a society of Negro physicians in Washington, D C., on May 26, 1946 The Medico Chirurgical Society of the District of Columbia is the oldest society of colored physicians in the United States, and this paper was prepared as its Second Annual Charles Sumner Lecture. The second World War was just over, fascism had been defeated, but signs of narrow nationalism were present everywhere. Dr. Sigerist took the opportunity, through an historical review, to explain the importance of an open minded, tolerant, international viewpoint in medicine The lecture, somewhat enlarged, was repeated for the Association of Internes and Medical Students at the Johns Hopkins Medical School on December 12, 1946 The paper was published in the *Bulletin of the History of Medicine* 21:5-16, January-February, 1947.

ever legislation might "be necessary in order to secure for medical practitioners in the District of Columbia equal rights and opportunities without distinction of color." He was defeated, but his name lives on and is remembered as that of a courageous man who not only talked about democracy but practiced it.

The subject of my lecture has some relation to the problems that you have been facing all these years, because nationalism is also a form of human conceit and intolerance that is poisoning the world and defeating democracy. After two World Wars we are particularly aware of it, but its evil effect was felt long ago. In 1902, on the occasion of a meeting of the Canadian Medical Association in Montreal, William Osler delivered one of his classical addresses on the subject of chauvinism in medicine in which he said:

Nationalism has been the great curse of humanity. In no other shape has the Demon of Ignorance assumed more hideous proportions; to no other obsession do we yield ourselves more readily . . . it rages today as of yore in spite of the precepts of religion and the practice of democracy. Nor is there any hope of change; the pulpit is dumb, the press fans the flames, literature panders to it and the people love to have it so.

In this address Osler turned his wrath on nationalism, provincialism, parochialism in medicine and castigated such absurdities as that of having different licenses in every state within one commonwealth. Almost half a century has elapsed since Osler gave his address, and if he could be with us today he would soon find that his most pessimistic predictions have become true, and that conditions are infinitely worse today than they were in the beginning of the century.

We have just emerged from an orgy of nationalism which almost wrecked the world. In many countries, fascism brought nationalistic feelings to the boiling point and distorted the sentiments of an entire generation. For over twenty years it was hammered into Italian youth that its mission was to restore the Roman empire in all its former grandeur. German youth was taught that it must conquer the world for the superior Nordic race—whatever that may be—and thereby redeem the world. And Japan being the most highly industrialized Asiatic country felt predestined to rule the entire far East. Millions of young people were trained for war and marched in black shirts and brown shirts, waving flags and banners, uttering savage cries of "Eia," "Heil," "Banzai." And numerous satellites circled in the orbit of the large fascist powers mimicking their antics.

NATIONALISM AND INTERNATIONALISM IN MEDICINE



LADIES and gentlemen: I feel greatly honored to have been invited to address the oldest medical society of colored physicians established in this country, although I deeply deplore that you were forced to create your own organization instead of being able to join hands with the white doctors of the capital in the common fight against disease. In no country is there more talk about democracy than in ours and no country is more eager to educate other nations in the principles of democracy, but when it comes to the practice of these principles at home we are sadly deficient and tolerate discrimination against fellow citizens on racial or religious grounds.

It is an honor to deliver a lecture named after a courageous man, Senator Charles Sumner of Massachusetts, who after the Civil War, when three qualified Negro physicians were refused admission to the medical society of the capital, did everything in his power to have enacted what-

.....

Always a foe of bigotry, Dr. Sigerist welcomed the invitation to address a society of Negro physicians in Washington, D C., on May 26, 1946. The Medico Chirurgical Society of the District of Columbia is the oldest society of colored physicians in the United States, and this paper was prepared as its Second Annual Charles Sumner Lecture. The second World War was just over, fascism had been defeated, but signs of narrow nationalism were present everywhere. Dr. Sigerist took the opportunity, through an historical review, to explain the importance of an open minded, tolerant, international viewpoint in medicine. The lecture, somewhat enlarged, was repeated for the Association of Internes and Medical Students at the Johns Hopkins Medical School on December 12, 1946. The paper was published in the *Bulletin of the History of Medicine* 21.5-16, January February, 1947.

ever legislation might "be necessary in order to secure for medical practitioners in the District of Columbia equal rights and opportunities without distinction of color " He was defeated, but his name lives on and is remembered as that of a courageous man who not only talked about democracy but practiced it

The subject of my lecture has some relation to the problems that you have been facing all these years because nationalism is also a form of human conceit and intolerance that is poisoning the world and defeating democracy After two World Wars we are particularly aware of it, but its evil effect was felt long ago In 1902, on the occasion of a meeting of the Canadian Medical Association in Montreal, William Osler delivered one of his classical addresses on the subject of chauvinism in medicine in which he said

Nationalism has been the great curse of humanity In no other shape has the Demon of Ignorance assumed more hideous proportions to no other obsession do we yield ourselves more readily it rages today as of yore in spite of the precepts of religion and the practice of democracy Nor is there any hope of change the pulpit is dumb the press fans the flames literature panders to it and the people love to have it so

In this address Osler turned his wrath on nationalism, provincialism, parochialism in medicine and castigated such absurdities as that of having different licenses in every state within one commonwealth Almost half a century has elapsed since Osler gave his address, and if he could be with us today he would soon find that his most pessimistic predictions have become true, and that conditions are infinitely worse today than they were in the beginning of the century

We have just emerged from an orgy of nationalism which almost wrecked the world In many countries, fascism brought nationalistic feelings to the boiling point and distorted the sentiments of an entire generation For over twenty years it was hammered into Italian youth that its mission was to restore the Roman empire in all its former grandeur German youth was taught that it must conquer the world for the superior Nordic race—whatever that may be—and thereby redeem the world And Japan being the most highly industrialized Asiatic country felt predestined to rule the entire far East Millions of young people were trained for war and marched in black shirts and brown shirts, waving flags and banners, uttering savage cries of 'Eia,' 'Heil, "Banzai." And numerous satellites circled in the orbit of the large fascist powers mimicking their antics

The trouble is that many people cannot distinguish between patriotism and nationalism. It is obvious that every sane and decent individual loves his country, that he is deeply attached to it, ready to serve and to defend it. He is proud of his country's achievements in the past and in the present and is strongly aware of the obligation imposed upon him by a great tradition. But the true patriot is also critical of his country, aware of its weaknesses, eager to cooperate in bettering its institutions. No country is perfect, and it is the duty of all patriotic citizens to work relentlessly so as to improve conditions steadily. Whoever truly loves his own country is tolerant of other nations and realizes and admits that they too have made contributions to civilization and progress. He may even find that some foreign country has solved certain problems better than his own and that he may well benefit by studying the foreign experiences. And even when he emotionally dislikes certain foreign ways he remains tolerant and respects them as long as they are not a menace to the security of his country.

The nationalist is different. He also loves his country, but he is blind, ignorant, conceited, and intolerant. He believes that his country is the only one that has ever made any contributions to civilization and ignores or at least minimizes the part played by other nations. He is convinced that the race or tribe, or whatever the group to which he belongs may be, is superior to all others, that whatever he does is good and noble and great, while what the neighbor does is bad and vile. He is oriented toward the past, glorifies it beyond measure in order to conceal his own inanity. Real achievements of his ancestors do not make him humble but boastful. Being utterly uncritical of his own country and unprepared to improve it, he becomes an easy prey of adventurers who flatter and exploit his nationalistic feelings. His boastful exaggerations frequently make a laughingstock of his country. A much advertised millennium that lasts only twelve years is not tragic but ridiculous. But nationalists must be taken very seriously because they are a menace to the world. Their ignorance and intolerance make them aggressive, and they are only too inclined to attack their neighbors in order to make them subservient to their own purposes and in order to force their way of life, the only correct one, as they believe, upon others.

How can nationalism affect medicine, a human activity that seems international if there ever was one? A pneumonia is the same biological process whether it takes place in an American, an Italian, or a Chinese. A broken leg is a broken leg whether the skin that covers it is white,

black, or yellow. Are treatments not basically the same wherever modern, scientific medicine has been accepted? In medical institutions, hospitals, laboratories, and schools all over the world, we find commemorated on the walls the name of our common ancestors from Hippocrates to Pasteur and beyond. All countries are represented. They all have contributed their share to the progress of medicine.

Indeed, there was a time when medicine was international. It was truly international for many centuries. Greek medicine was the medicine of the entire Mediterranean world for over one thousand years. It evolved a great deal in the course of time and was by no means uniform. The *Corpus Hippocraticum*, that unique collection of medical books, was written in the same language, *Ionian Greek*, but contained treatises from different schools. There was disagreement and competition between the schools of Cos, Cnidos, Croton, Sicily, but their medicine was practiced all over the Greek territory and not only locally. The fact that most Hippocratic physicians were itinerant practitioners, guaranteed the spreading of doctrines and techniques.

The international character of Greek medicine became still more outspoken in the Hellenistic period. Alexandria was not only a commercial metropolis but a great center of studies that attracted scientists and scholars from all over the Greek world and to which students flocked until the time of the Arabic conquest. The classics of medicine were collected and edited and acquired the form in which they have come down to us. Medical books were written in Greek and continued to be written in that language all through the Roman period, with the exception of books for the layman like the section on medicine in the *Encyclopedia* of Aulus Cornelius Celsus.

A change took place when the Roman Empire disintegrated in the period that we commonly designate as the early Middle Ages. Greek was gradually replaced by Latin in western Europe. Latin was the language of the administration and of the courts. It was the language of the western church and the vernacular language of Italy, Spain, and the Gauls. Greek medical books were translated into Latin while new books were written in it directly. The church was the strongest cultural force in western Europe, and throughout the Middle Ages medicine, science, and learning were international all through the West.

Conditions were very similar in the East, where the religion of Mohammed had created a strong bond that united the nations from Spain through North Africa into Asia as far as India. Arabic was not only the

language of the Koran but also the language of science, and medical books could be read and studied all over the Islamic world, whether they had been written in Spain, Morocco, Egypt, Syria, or Persia. Thus for more than a thousand years two systems of medicine, both international in character, dominated large sections of the world. They were different in language and in the underlying religion but very similar in character, because they both built upon the same foundation of Greek medicine. The intercourse between East and West was a very intimate one, particularly at the time of the Crusades when the two worlds clashed in the near East. Arabic books were translated into Latin, and the great classics of Islamic medicine, Rhazes and Avicenna, became western classics as well who ranked next to Hippocrates and Galen. The ways parted at the time of the Renaissance when a new medical science based upon the foundation of anatomy began to develop in the West, while the East continued to follow traditional lines. Medieval medicine is still practiced in large sections of the Orient, and a highly popular school of indigenous medicine in India calls itself *Unani*, which means Greek, but it actually is the old Greco-Arabic medicine.

The university that developed as a center of learning in the West during the Middle Ages was a highly international institution, a free association of teachers and students from many lands. The early university had no property, all it possessed was a charter, and professors and students felt free to move from one country to another if they found conditions unsatisfactory. Thus a group from Paris crossed the channel to England and settled down at Oxford. Students from Bologna moved north and founded the University of Padua. Students and teachers from Prague decided to continue their work at Leipzig and became the nucleus of that famous university. No student was refused on account of his nationality. They were all Christians, had in Latin a common language of learning. All universities had similar institutions and degrees were recognized all over the western world.

This international character of medicine persisted throughout the Renaissance. The great anatomist, Andreas Vesalius, was born at Brussels, educated in Louvain, studied medicine in Paris, graduated at Padua, where he became Professor of Surgery and Anatomy, published his great book in Switzerland at Basel, joined the imperial court in Spain and the Netherlands, went on a pilgrimage to the Holy Land, and died on a Greek island. Such a career was by no means unusual, and it is well known how Paracelsus, another great Renaissance physician,

spent most of his life traveling from one country to another all through Europe and the near East and practiced medicine while he was traveling.

The European university, science and medicine at large, maintained their international character to the end of the eighteenth century. At that time it was still possible for a medical student to begin his studies in one of the universities of his native land, then to proceed to Paris, Leipzig, Padua, or Salamanca, wherever there were professors with whom he wanted to study. The Swiss physiologist and universal naturalist, Albrecht von Haller (1728-1777), attended the schools of his home town, Berne, studied medicine at Tübingen in Germany and Leiden in Holland where he graduated. He then went on a study tour through Holland, England, and France, did postgraduate work at the University of Basel, started out in practice in his native Berne, from where he was called to the newly founded University of Göttingen as Professor of Anatomy, Surgery, and Botany at the age of twenty-eight. Haller was in correspondence with the entire scientific world of the time, and the letters written to him fill many volumes that are carefully preserved at the university library of Berne. Even when he wrote to his most intimate friend, Johannes Gessner in Zurich, he used the Latin language. It was the universal means of communication between scholars and scientists, and whether a book was published in Sweden, Holland, or Spain it could be read immediately by the scientists of the world.

Science was not a war weapon in those days, and it was generally accepted that the brotherhood of scientists extended beyond national borders and should be maintained at all costs, even in times of war. The original charter granted to the American Philosophical Society held at Philadelphia for promoting useful knowledge explicitly foresaw:

That it shall and may be lawful for the said Society by their proper officers, at all times, whether in peace or war, to correspond with learned Societies, as well as individual learned men, of any nation or country, upon matters merely belonging to the business of the said Society, such as the mutual communication of their discoveries and proceedings in Philosophy and Science; the procuring books, apparatus, natural curiosities, and such other articles and intelligence as are usually exchanged between learned bodies, for furthering their common pursuits; Provided always, That such correspondence of the said Society be at all times open to the inspection of the Supreme Executive Council of this Commonwealth.

When Jenner's vaccination was being tested in England, Woodville, one of the early vaccinators, was anxious to have the opinion of his French colleagues. But France and England were at war in 1800. Never-

theless, diplomatic steps were undertaken; Talleyrand, the French Minister of Foreign Affairs, issued special passes and permits. In May 1800 vaccine was sent from England to Paris, and in July of the same year Woodville came in person, was received as an honored guest, and performed vaccinations on French children in Boulogne and Paris.

When Latin died as international language, it was replaced to a certain extent by French. The Prussian Academy of Science, as well as the Russian Academy published their memoirs in French. French was the language of the nobility and hence also of diplomacy. No interpreters were needed at the Congress of Vienna because the diplomats had one common tongue in which they could negotiate.

When the remnants of feudalism were overthrown by the French Revolution and the middle class came into power, the need was strongly felt for a new type of university. Latin was abolished as the language of instruction. Old academic rites that had lost their meaning were abandoned, new curricula were devised, and the universities were not merely centers of teaching but also of scientific research with libraries, laboratories, and clinics. The universities played a decisive part in the great development of science that took place during the nineteenth and twentieth centuries, but they were no longer the international centers that they had been in the Middle Ages. National schools of medicine developed. The centers shifted. The French school dominated the first half of the nineteenth century and was succeeded by the German school, which developed the laboratory methods of medicine. In the United States, medical conditions were chaotic before the Civil War, but after the war a reorganization took place. New standards were set by the states, and, since the schools could not be trusted as yet, students had to take state board examinations that gave them a license to practice. New medical societies were founded which took an active part in the reorganization of medical education and practice. New schools were organized, such as the Johns Hopkins School of Medicine, with new curricula that combined the best features of foreign medical education and blended them into a new, very promising pattern. With its immense resources, the United States was able to carry on medical research on a large scale, and, while American students in the past were forced to go abroad for specialized instruction, today foreign doctors are coming to the states in increasing number for postgraduate training.

Russia, before the revolution of 1917, could pride herself on a number of very distinguished medical scientists, clinicians, psychiatrists, and

particularly physiologists. The Oldenburg Institute of Experimental Medicine, of which Pavlov was the driving spirit, had a world reputation. The reorganization of medicine after the revolution, the great emphasis placed on science, on scientific research by the Soviet state have resulted in the creation of a large number of research institutions well staffed and lavishly supported, from which important results have already come and many more may be expected.

Medicine, as we have seen, developed along national lines, and while spectacular discoveries became known immediately, yet the difference between the schools of the various countries remained considerable. The difficulty of understanding one another was greatly increased. Medical journals were founded in growing number but could be read only by those who happened to know the language. When a scientist made a discovery in the eighteenth century, he did not publish it immediately but described it in a letter written in Latin that was sent to some friends abroad. They, in turn, would discuss these letters with their students and colleagues, would repeat the experiments described, and report what their experience had been. After a discovery had been tested in such a way, it might then be published, either in a monograph or in the transactions of an academy. In the nineteenth century, and in the twentieth century still more, the ease with which a paper could be published made it very tempting to announce an observation or the result of an experiment before they even had been tested. Medical literature increased in a terrifying way, and at the same time the literature was accessible only to the doctors who understood the language. When the Johns Hopkins School of Medicine was opened in 1893, knowledge of Latin, French, and German were entrance requirements. The older generation knew these languages, while today Latin has been waived as a requirement and a very few of our students know French and German sufficiently well to read a medical text fluently.

The difficulty of understanding one another across national borders called for the organization of international societies of medicine and of the various specialties. International conventions were held that brought physicians of various countries together, but the language barrier remained and, with growing nationalistic feelings, these conventions were frequently a battleground on which national feuds and personal ambitions were fought out.

In one field of medicine international cooperation was imperative and could not be suppressed even in the most nationalistic periods of

our modern history, namely, in the field of public health. Communicable diseases do not respect national boundaries nor class barriers, and, as soon as people had a clear concept of the contagiousness of certain diseases, measures were taken by governments to protect their nations against the introduction of these diseases. The Black Death that ravaged the world in the fourteenth century was a lesson that nobody could forget, and soon thereafter, in 1377 the city council of Ragusa ordered that all travelers coming from plague ridden countries should be barred from the city unless they had spent one month on the island *Mercana ad purgandum*. Venice followed the example, and so did gradually one port after another. From 1664 on, England required a bill of health from every ship that came from Turkey and Egypt. Medical intelligence became a duty of diplomatic agents. Milan kept special agents north of the St. Gotthard to examine travelers and report about them.

The Asiatic cholera that hit the western world several times in the course of the nineteenth century stirred up public opinion still more. An international conference was called in Paris in 1851 with the purpose of organizing maritime quarantine on an international basis. This first conference failed in its attempt to create a permanent international health organization, but the idea remained in the air. Further international health conferences were held in Paris and other cities. In 1881 the Washington conference made yellow fever its special target and created a system of international notification of the disease. Finally, in 1909, the Office International d'Hygiène Publique was founded in Paris as a clearinghouse of medical intelligence. It had a permanent committee and delegates from fifty four nations.

The Suez Canal was opened in 1869 and, since plague, cholera, and other epidemic diseases had attacked Europe from the East, it seemed logical to make the canal a filter through which diseases would not be permitted to enter the Mediterranean basin. Egypt became the quarantine outpost of Europe. In 1892 the Sanitary Maritime and Quarantine Board of Egypt was established.

In the western hemisphere, ever since the International Sanitary Conference of Washington of 1881, the plan of an office that would prevent the spreading of communicable diseases in the hemisphere and would serve as a center of medical intelligence was considered. It was realized in 1902 when the Pan American Sanitary Bureau was organized with offices at Washington.

Another international organization was an offshoot of the wars that had

taken place in the middle of the nineteenth century War, the reversal into primitive savagery, was greatly resented in the nineteenth century at a time when humanitarian feelings had become very strong Attempts were made to mitigate at least the horrors of war Henri Dunant's *Souvenirs de Solferino*, published in 1862, stirred the conscience of the world, in 1864 the Red Cross Covenant was accepted, and one country after another founded Red Cross societies

A new step was taken when the League of Nations began to function in 1920 Article 23 of the covenant made it the duty of the League to endeavor to take steps in matters of international concern for the prevention and control of disease A health organization was founded as a section of the Secretariat of the League, and I think everybody will agree that this was one of the best functioning branches of the League It was obvious that the successor to the League, the United Nations, would feel its responsibility toward the people's health, and on July 22, 1946 representatives of sixty one nations signed the constitution of the new World Health Organization Its objective is the attainment by all peoples of the highest possible level of health, and the introductory paragraphs to the constitution reflect a very broad attitude toward the problems of health and disease

Health is a state of complete physical mental and social well being and not merely the absence of disease or infirmity

The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race religion political belief economic or social condition

The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest cooperation of individuals and States

The achievement of any State in the promotion and protection of health is of value to all

Unequal development in different countries in the promotion of health and control of disease especially communicable disease is a common danger

Healthy development of the child is of basic importance the ability to live harmoniously in a changing total environment is essential to such development

The extension to all peoples of the benefits of medical psychological and related knowledge is essential to the fullest attainment of health

Informed opinion and active cooperation on the part of the public are of the utmost importance in the improvement of the health of the people

Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures

Public health could not afford to indulge in narrow nationalism, but other branches of medicine did Every country considered its medical

standards to be the highest, its system of medical education the best, its way of presenting a paper the only correct one. The writing of medical history has been poisoned with nationalistic prejudices, every country claiming priority for discoveries, hunting for "firsts" and "fathers" of medical inventions. Yet history teaches us very clearly that discoveries are usually not made out of a blue sky, but that many brains and hands are needed until a new idea has been conceived or a discovery has been made and has been applied for the benefit of the people.

We in America are not exempt from nationalistic prejudices. We may be justly proud of the great progress achieved since the beginning of this century and of the many and great contributions that American scientists have made to medicine, but we should remember that the sulfa drugs came to us from Germany, penicillin from England, and DDT from Switzerland. It would be foolish presumption to assume that Europe is finished. Many European countries have just gone through very difficult times, but the creative forces are still very powerful in Europe, and energies which were absorbed in the pursuit of sterile imperialistic ends may now be applied to creative purposes. It would be a great mistake for us to stop learning foreign languages and to ignore the work of other countries.

We should also remember that, while we are ahead of other countries technically, we are behind many of them socially, so that in this field we could learn a great deal from foreign experience. We probably have the best-trained and best-equipped dentists in the world, but the majority of all American people have no dental care. We still have to learn how medical science can be applied to all the people, irrespective of race, color, or creed, irrespective of whether people are rich or poor and whether they live in cities or in rural districts.

Science and technology have developed tremendously in recent years, but civilization has not kept pace with this development; on the contrary, we must admit that we are in many ways much more savage, brutal, and intolerant than our ancestors were a few generations ago. Medicine is one field in which science is applied to a good end. While physicists and chemists live in constant fear that their discoveries will be used for the destruction of mankind, medical science so far has been used to prolong life and alleviate suffering. Even in the barbaric wars of our days, the neutrality of medical personnel has been respected, as a rule, and physicians have treated friend and foe without discrimination. Physicians, therefore, should be ambassadors of good will. In the

medical field nationals of different countries meet on a neutral ground where understanding is easier. It is the duty of physicians to help in the promotion of understanding between nations and to combat nationalistic prejudices.

REMARKS ON SOCIAL MEDICINE IN MEDICAL EDUCATION



ALL education presupposes an educational ideal. General education and secondary education have an ideal citizen in mind, and the purpose of the schools is to produce this ideal citizen or at least to train young people toward that goal and to bring them as close to the ideal as possible.

Similarly, medical education has an ideal physician in mind. Schools and curricula are organized in such a way that their end product will be a physician who conforms to this ideal or comes as close to it as possible. Sydenham, Boerhaave, Osler have assumed an outstanding position in the history of medicine, not so much for their scientific contributions as rather because they came closest to the medical ideal of their time.

It is important to be aware of the fact that the medical ideal has changed a great deal in the course of the centuries and is evolving constantly. Medical education, therefore, can never reach definite forms, but is obliged to adapt itself to ever changing conditions. Every society required of its physician certain qualities, such as knowledge, skill, devotion to his patients, conscientiousness. But the position of the

.....
After returning to Switzerland, to the little Ticino village of Pura, to write his *magnum opus*, Dr. Sigerist still maintained contact with the world of action. In 1952, he was invited by the World Health Organization to serve on its Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel, and he attended the second session of that select committee held at Nancy, France, December 3-9, 1952. Each of the eleven members of the committee prepared a "working paper" around the focus of concepts of social and preventive medicine in the medical curriculum. Here is Dr. Sigerist's contribution, in which he summarized a lifetime of experience in the field of medical education. This paper has not been previously published.

physician in society and the tasks assigned to him changed and were determined primarily by the social and economic structure of a given society and by the scientific and technical means available to medicine at the time.

If medical education is to fulfill its purpose and is to train the physician not of yesterday but of tomorrow, we must have a clear picture of what kind of doctor our present industrial civilizations require. In the past the physician was a priest, a craftsman, a philosopher, a cleric, and he became a scientist with the rise of the natural sciences. It is perfectly obvious that the requirements put upon the physician, and the task of medical education, were different in all these periods. Today we are living in a time of transition, when social and economic conditions change rapidly, and medical science is progressing more than ever before in history. In the beginning of our century, the task of medical education was to produce primarily a family doctor, well trained scientifically, and prepared to cooperate with the hospital, which was no longer a place for the treatment of indigent patients but was sought out by all groups of the population for examinations, treatments, and childbirth.

Have conditions changed in the past fifty years? Yes; indeed, the changes have been tremendous. Medical science has progressed still further and has become still more technical and still more specialized. A highly developed physiology, using complicated methods of chemistry and physics, has become the backbone of every medical field. New methods of treatment have made possible the curing of diseases that were deadly only yesterday. Public health no longer limits its field to the traditional tasks of quarantine, sanitation, etc., but has moved closer to the individual and has established services for the care of pregnant women, infants, school children, and for the combatting of social diseases, such as the venereal diseases, tuberculosis, and industrial diseases. As a result of these developments, the incidence of illness has changed completely. Acute diseases are no longer in the foreground, but the chronic diseases of mature and old age, those diseases that require close and steady supervision by the physician. Medical science is sufficiently advanced today to give the physician the scientific means necessary in order to practice preventive medicine on a large scale.

We must furthermore be aware of the fact that the scope of medicine has broadened considerably in the course of the last fifty years. The doctor is no longer the mere therapist that he used to be. He has become the adviser of the educator. Mental hygiene, still in its infancy, will

emphasized the natural sciences in premedical curricula and have greatly neglected the humanities and the social sciences, overlooking the fact that medicine basically is a social science, as its goal is eminently social, namely, to keep one's fellow men adjusted to their environment, or to readjust them, as the case may be. The American college as a school between secondary school and graduate school provides an ideal opportunity for giving the future medical student a general education and a broad cultural background, provided it is handled in the proper way. Very promising beginnings have been made at Harvard, Chicago, and a number of other colleges. In Switzerland there is much talk at the moment of reviving the old *studium generale*, requiring all university students, no matter what their field of study may be, to devote their first year to the study of history, philosophy, sociology, and similar subjects.

2 Today in most western countries medical students are recruited from among the upper middle class and have no idea of what living and working conditions are in other social strata. Most of them have never seen what work is like in a coal mine, in a steel mill, in an office where fifty people work in the same room, in other words, they do not know the social environment from which their patients come. In my teaching of the sociology of medicine I used to take student groups to such places and found the results very satisfactory. It would be most desirable to have physicians recruited from all classes of the population, and this obviously requires that medical education be free and available to all, or at least that a sufficient number of scholarships be available to open the doors of the medical schools to students whose parents have not the means to pay for a very long and costly period of training. It also means that interns should be remunerated adequately.

3 Under present conditions problems of social medicine are presented to the student in several departments. In many countries the department of hygiene and public health has broadened its field of activity considerably. In the German speaking countries the heritage of Robert Koch is still strongly felt, in that professors and heads of the department are not hygienists but bacteriologists, serologists, immunologists, researchers in the field of virus diseases, who have little understanding of public health and social medicine. In other countries, however, conditions are very much better. And in some universities special departments have been created, doing similar work under various names, such as social medicine, preventive medicine, or medical care.

4. Another important development is represented by the increased attention paid to psychiatry and mental hygiene in medical school curricula. The great importance of psychological factors in the genesis and cause of disease has been recognized at last. The psychiatrist cannot study the individual patient in isolation but only as the member of a group in his relationship to other human beings. The psychiatric case history is the elaborate biography of an individual in his social relationships, and in psychiatry, even more than in other fields of medicine, social restoration is the true criterion of healing. Psychiatric clinics developed medical social services before other hospitals did, because they felt more strongly the need to investigate a patient's environment and to follow him up after he had left the hospital. The department of psychiatry in the medical school has of necessity close affinities to the social sciences.

5. Forensic medicine or medical jurisprudence, much neglected in America but highly cultivated in European schools, is a subject which also presents many opportunities for social studies. Its major object is social pathology, and in its combination of physics, chemistry, pathology, psychiatry, jurisprudence, and penology it undoubtedly broadens the outlook of the medical student.

More can be done under existing conditions by cultivating the history, sociology, and economics of medicine. And here I may draw on my experience of twenty-six years of teaching on three continents. Medical history teaches the student where medicine came from, where we stand at the moment, and in what direction we are steering. To the premedical students or students in the first semester, in Europe and America, I used to give a course which was always much appreciated and covered the following subjects:

1. Man in health: (a) Man as a mammal: structure, function, mind. (b) Man as a social being.
2. The promotion of health.
3. Man in illness.
4. Disease: symptoms, nature, diseases, incidence of illness, social and economic consequences.
5. Causes of disease: heredity, social environment, physical environment.
6. Prevention of disease.
7. Restoration of health: history of the sick, diagnosis, treatment, rehabilitation.
8. Medical practice and the organization of medical services.
9. The physician yesterday, today, and tomorrow.

Such a course gives an ideal opportunity to prepare the student for the study of medicine and since the teacher is the first medical man the students are listening to, I found them extremely receptive and found that whatever I told them was remembered after many years. In such a course the accent is on medicine, and history is primarily used as a means to explain complicated matters in a simplified way. When teaching medical history to medical students, we put the accent on history and endeavor to show the student what the driving forces of history are, to present some of the great civilizations of the past discussing their social and economic structure, their health problems, what was done to meet them, how it was done, and why it was done in a given way. Such a course greatly broadens the general education of a medical student. He studies the history of civilization in relation to his own field.

I also found it very profitable to give courses to advanced students in what I used to call the sociology and economics of medicine. I gradually developed a lecture course which covered about the following fields:

I Foundations

- 1 Structure of an industrial society
- 2 The new technology of medicine

II The incidence of illness

- 1 Recent changes in the incidence of illness
- 2 Social distribution of illness

III Supply and distribution of medical personnel and equipment

- 1 Physicians (general practitioners and specialists), dentists, nurses, technicians, etc.
- 2 Hospitals, sanatoria, laboratories, etc.
- 3 Public health services
- 4 Industrial health services

IV The costs of illness

- 1 Costs of medical care
 - (a) Costs of personnel (incomes of physicians, dentists, etc.)
 - (b) Hospital economics
 - (c) Costs of drugs and appliances
 - (d) Miscellaneous expenditure
- 2 Loss of wages
- 3 Capital losses through premature deaths

V Methods to meet the costs of illness

- 1 Voluntary insurance
 - (a) Mutual benefit societies
 - (b) Commercial insurance
 - (c) Private group clinics with prepayment plans

- (d) Cooperative health associations.
- (e) Group hospitalization (Blue Cross)
- (f) Medical service plans of medical societies.
- (g) Rural health plans under the federal government.
- 2. Compulsory insurance.
 - (a) History, principles, scope.
 - (b) Groups covered.
 - (c) Benefits.
 - (d) Cost, premiums, remuneration of physicians.
 - (e) Administration.
- 3. Public services.
 - (a) Expansion of public health services.
 - (b) From *Zemstvo* to Soviet medicine.
- VI. Recent trends in medical organization.
 - 1. Group practice.
 - 2. Health centers.
 - 3. Health districts.
 - 4. Special problems of rural health services.
 - 5. Democratic control of health services.
- VII. Critical summary and outlook.

In addition to this course, I gave, once a week, an evening seminar on problems in the sociology and economics of medicine, in which current affairs were discussed, dealing with the American scene and foreign countries. The course was attended by students of the medical school, of the school of hygiene and public health, by economists and employees of the federal government in Washington, and I found that the cooperation between these various groups was most productive.

§

I wish to add a few general remarks.

All education is self-education. All we can do as academic teachers is to inspire the student, to arouse his curiosity, and to teach him methods. The actual learning he must do for himself. Hence it is essential that he should not be overburdened with courses. In most countries an enormous amount of time is wasted with the teaching of anatomy and with the lack of coordination between anatomy, physiology, pathology, and similar subjects. The student must have time to read, to think, and to assimilate what he has heard and seen. The four year course of American universities is too short, and it would be better to cut the college period down to two years and have six years of medical

school. The study of medicine is not only a matter of courses and hours but also of time, of maturing in the subject.

Students are trained in hospitals, but hospital conditions do not exist in general practice, in rural districts, in remote regions, where physicians are called upon to practice. Hence increased attention must be paid to teaching students what the conditions of practice are in the homes and in rural communities. In various countries, the schools through their outpatient departments or polyclinics send physicians and students into the homes of patients. This is good training for the students and relieves the overcrowded hospitals. With well-organized home nursing care, many patients can be treated in their homes. In the United States, where the summer vacation is very long, student teams could be sent out to do field work in various sections of the country, in clinics, nurseries, rural health centers, on Indian reservations, in migrant agricultural camps, in distressed areas where there is always a shortage of physicians. The experience thus gained would be invaluable. Many medical schools have a weekly clinical-pathological conference, which should be supplemented by a medicosociological conference at which students could report on their experiences in the field.

The Institute of Family and Community Health of Dr. S. L. Kark in Durban, South Africa, is a good example of how young physicians may be trained for practice under special conditions.

Whatever plans are being made for the future of medical services, they should provide for the physician to be economically independent of the patient. The doctor's prosperity should not depend on the ill health of his patients, and the doctor of the future will not wait for his fellow men to become sick but will teach them how to remain in good health, and will be with them in the factories, on the farms, in offices, wherever people live and work and are exposed to illness and injuries. Medical schools must teach the student that the practice of medicine is not a trade but a social service, and, while the physician is fully entitled to good remuneration for his very important work, he must not be exposed to the indignity of having to sell his services on the open market.

WHAT MEDICINE HAS CONTRIBUTED TO THE PROGRESS OF CIVILIZATION

BEFORE discussing the problem of what medicine has contributed to the progress of civilization, we must raise the questions: has civilization progressed at all? Are we more civilized than the Athenians in the fifth century B.C., or the Romans of the Augustan age, or our medieval ancestors of the thirteenth century, or the men of the Renaissance? Has there been progress in poetry, music, the fine arts, in human intercourse, which are the essence of civilization? Is there more love in the Christian countries today than there was in the early Christian communities, more compassion in Buddhist countries at this time than at the time of Asoka?

It is impossible to answer these questions with a clear yes or no because the concept of progress does not apply to some of the finest manifestations of the human mind. We have great poets, composers, and painters but nobody would claim that there has been progress from Petrarch to Paul Valéry, from Bach to Bartok, from Raphael to Rouault. Each one of these great men expressed in a perfect way the aspirations of his time with the means available at that time. And after two world

.....
The last public conference that Dr. Sigerist addressed was the Fourteenth International Congress of the History of Medicine, held at Rome, Italy, on September 17, 1954. Shortly afterwards he suffered a vascular accident, from the effects of which he never completely recovered. In this talk he reviewed the historic contributions of medical science, medical practice, and individual physicians to the general advancement of civilization and culture throughout the world. The paper was published in the *International Record of Medicine* 168:383-391, June, 1955.

wars and colonial wars fought with increasing savagery and with the most despicable means, we have no reason to be proud of our civilization.

Voltaire fought a lifelong battle for the abolition of torture as a method of legal procedure, but today torture is used again in many countries. We tried to humanize war through the Red Cross, but civilian populations of entire cities continue to be wiped out. I need mention only Guernica, Lidice, and Hiroshima to remind you of some of the darkest spots of our present civilization.

Yet in spite of these reversals to primitive savagery some progress has been achieved. Greek civilization of the fifth century B.C. was shared by a small upper class only; the same group that enjoyed the benefits of Hippocratic medicine, for it was not a *medicina pauperum*. Poor people either had no medical care or had to seek it in the temples, and even there gifts were expected. The Rome of Augustus and his successors produced great statesmen, writers, and poets, but here again it was a relatively small upper class which prospered from the labor of innumerable slaves at home and in the colonies. The very fact that there was such an immense proletariat in the Roman Empire created a most fertile ground for the acceptance and spread of Christianity, a religion that addressed itself not only to the pure but also to the underdog and promised healing, redemption, and equality before God. The medieval world was the picture of a perfectly integrated society which had great spiritual and artistic values, but the insecurity in which the individuals lived was very great. War, famine, and pestilence were constant threats, to which millions of people succumbed. Conditions were not much better in the Renaissance, nor was life very safe in the seventeenth and eighteenth centuries.

When we look at today's world we must distinguish between economically advanced and economically undeveloped countries. In large sections of the globe and particularly in Asia, Africa, and parts of central and South America millions of people still live in dire misery—poor, ignorant, sick, always undernourished, working as coolies or peons, the modern version of slavery. But today in all these countries there is a tremendous awakening. Century old chains are being broken, land is being redistributed so that those who till it may have their due share. The colonial period is coming to an end, and people of all colors and races are refusing to be exploited for the benefit of a foreign master.

Though colonialism may still mean foreign domination by force of arms, it may also appear camouflaged in the more subtle form of eco-

conomic imperialism when a foreign power owns and exploits the riches of a country's soil, determines the wage level, and thus the standard of living. However, in whatever form it may appear today colonialism is doomed. People of all lands want to be free—free to determine their own destinies. Countries like India and China are each experiencing, in its own way, changing economic conditions or rather a new economic order, liberation from age-old religious customs and other taboos, and concomitantly a new flowering of culture, much as we of the West did in the Renaissance. The time may possibly not be so far distant when countries of Asia, Africa, central and South America shall have reached a material standard of living comparable to that of western Europe and the United States, and perhaps on an even higher cultural level.

This brings me now to the discussion of the so-called economically advanced countries of the West, and here there can be no doubt that civilization has progressed in a certain sense. Poetry, music, and the fine arts may not be better than in the past, but the number of people who have a share in them is infinitely greater. Workers are no longer slaves or serfs, coolies or peons, but free men who work under contract and have strong unions to protect them. The production of goods and commodities of all kinds has increased considerably, and the number of people who enjoy them is greater than ever before. Life in normal times is very much safer than in the past, and all this undoubtedly means that on this account civilization has progressed. The question now is to determine what medicine has contributed to this progress.

We all know that a sick artist or writer may create great works. Mozart was suffering from tuberculosis when he wrote his *Requiem*, as was Fragonard when he painted some of his loveliest pictures. Van Gogh undoubtedly suffered from a serious psychosis, and Paul Verlaine wrote some of his best poems when he was intoxicated with alcohol. Illness, in other words, does not prevent some people from creating great works of art; the illness becomes part of their personality and expresses itself in their work. But these are exceptions. Men like Monet, Cézanne, Matisse, Picasso, Emile Zola, Thomas Mann, and many others would never have created what they did if they had been handicapped by illness. Good health for the people, of the creative artist as well as of the laborer and farmer, is a prerequisite of a higher civilization, and there can be no doubt that in this respect conditions have tremendously improved in the West.

A child born in the eighteenth century had very good chances of dying

soon after birth or as soon as the summer heat set in and infantile diarrheas developed and caused havoc among the newborn. A few years later, such infantile diseases as measles, whooping cough, scarlet fever, diphtheria, and many others threatened the child's life. When he reached adolescence, tuberculosis was a disease which frequently destroyed many young lives. Smallpox was a dreaded killer in the old as well as in the new world, and it has been estimated that in the eighteenth century, despite inoculation, 2000 people died annually of smallpox in London alone. Water and food carried diseases such as typhoid fever and dysentery, which not only caused epidemics but were endemic in many countries. Cholera reached the West three times during the nineteenth century. Malaria, a tropical disease, was widespread, reaching far north in Europe as well as America.

All this has changed, and in the economically developed countries health conditions are better than they have ever been. This enormous progress can be measured and therefore expressed in figures. The general death rate of London, that is, the number of annual deaths per 1000 population, was on an average 42 during the period 1681 to 1690. It dropped to 23 in 1846 to 1855 and was 14.2 in 1929. Today it is between 8 and 15 in advanced countries. Similarly the infantile death rate, that is, the number of infants dying during the first year of life for every 1000 children born, is today between 25 and 70 in most advanced countries. It was 17, that is, 1.7 per cent, in the Swiss city of Basel in 1951. In the eighteenth century the infantile death rate was ten times higher all over Europe. Many children were born, and many died. As a result of improved conditions the average life expectancy at birth has increased in a spectacular way. It has been estimated that it was 20 to 25 years in the fifteenth century; it is between 60 and 70 years today in the West.

There had been a spectacular decrease in the mortality of certain diseases. The following comparison for England and Wales may illustrate this. The number of deaths per one million population was:

	1871-1880	1931-1940
Smallpox	240	0
Typhoid	320	5
Typhus	60	0
Tuberculosis, respiratory	2130	601
Tuberculosis, other forms	750	121

Another set of impressive figures comes from the United States Army. For every six men who died, not from battle wounds but from disease,

during World War II, 160 died during World War I, 250 died during the Spanish-American War of 1890, 650 died in the Union Army during the Civil War of 1861 to 1865.

This is a drop from 100 to 1 in less than a century. These few figures illustrate most graphically the progress of medicine and one great contribution it has made to civilization. Of course, we must be aware that medicine was not the only factor responsible for these advances. The higher standard of living, more and better food, housing, clothing, heating, etc., were probably even more instrumental in improving conditions. This is best illustrated by a statistic published by Winslow. On one fifth of the inhabited earth the people have on an average:

Annual income	\$461.00
Food consumed per day	3040 calories
Physicians available per 100,000 population	106
Life expectancy	63 years

On four-fifths of the inhabited earth, however, the people have only:

Annual income	\$41.00
Food consumed per day	2150 calories
Physicians available per 100,000 population	17
Life expectancy	30 years

This shows that the task is by no means completed. Large sections of the globe still live on a very low standard and do not enjoy the full benefits of modern medicine. But even in the advanced countries much remains to be done. The acute diseases are no longer the main killers; the chronic diseases are in the foreground. In the United States, a country with very good health conditions, 26,000,000 people suffer and are handicapped by chronic illness: rheumatic diseases, diseases of the heart and circulation, asthma, hay fever, chronic bronchitis, kidney diseases, psychoses and neuroses, diabetes, tuberculosis, and gastric and duodenal ulcers. There are still great unconquered enemies, such as poliomyelitis and cancer. But there can be no doubt that enormous progress has been achieved. Life in many countries has become infinitely safer and the span of life extended considerably. This has created still a new unsolved problem, for there is no point in having a large over-aged population of senile and decrepit individuals. Medicine still has to find ways and means to keep the tissues, particularly the connective tissue, young and elastic.

What has made medicine so infinitely more efficient than in the past? It was science, the fact that medicine became scientific. I think it is no exaggeration to say that, until the time of the Renaissance, European

Every philosophy, be it that of Plato, Aristotle, the Stoics, Epicureans, Skeptics, Christian philosophy, Vitalism, or Materialism, to mention only a few Western philosophies, is reflected in medicine, and to all of them physicians made contributions. Their knowledge of man and human suffering, their study of life in health and disease, could not but stir some of them and drive them to reflect about the final causes of life.

Along this line the greatest and most far reaching contribution of medicine has been in the field of psychology. The first impulse probably came from physiology. Wilhelm Wundt and his school demonstrated that many mental processes could be measured with apparatuses which are still used today for capacity and other tests. The Russian neurophysiologic school of Sechenov, Bekhterev, and, above all, Pavlov exerted and is still exerting a tremendous influence on philosophy, psychology, sociology, and the conduct of human affairs in general. Pavlov's theory of conditioned reflexes opened up wide horizons far beyond the field of physiology.

Further impulses came from psychiatry. Charcot's clinic in Paris was attended not only by physicians and medical students but by philosophers, writers, artists, and people from all walks of life. His case histories, as well as the case histories from the Hôtel Dieu of A. Trousseau, were eagerly read and served as examples to the young naturalistic school of writers. The brothers Goncourt's novel *Germinie Lacerteux* of 1865 and Emile Zola's first novel *Thérèse Raquin* of 1867 are plain clinical case histories. Zola's gigantic fresco of French society at the end of the Second Empire, the *Rougon Macquart*, is a detached study in heredity which pictures the ups and downs of human life in all its aspects and in a most realistic, almost clinical, way. The whole school was deeply influenced by Claude Bernard who in his *Introduction à la Médecine expérimentale* of 1865 enthroned reason and described the methods by which science interrogated nature and forced her to answer questions. Zola, inspired by Bernard's book, wrote *Le Roman expérimental*, in 1880, which became the bible of the naturalist school. But long before, in 1859, Victor Hugo, that great poet and radical politician, in *La Légende des Siècles* had said that the mission of the poet and philosopher was to try to handle social facts as the naturalist does zoologic facts.

Thus medicine has undoubtedly exerted a strong influence on literature, and this was not only the case in the nineteenth century. There was a time when medical literature was not only conveying observations and ideas but was real literature as well. Fracastoro's poem of 1530 on syphilis

is not only a medical book but an epic, the beauty of which enchanted his contemporaries as it still does us today.

Psychiatry had far-reaching repercussions in many fields of human civilization. The work of men like Forel, Bleuler, Kraepelin, Freud, Adler, Jung, to mention only a few, greatly enriched our knowledge of the workings of the mind. This deeper understanding of man's mental reactions made it possible to improve education greatly and to develop a mental hygiene by which people may be kept adjusted to their environment and may be prevented from becoming asocial. Mental hygiene is still in its infancy, that is, we have the knowledge to keep people adjusted as happy and useful members of society and to prevent crime to a large extent, but it takes much time for the authorities to take advantage of scientific progress unless it be for purposes of war, when unlimited funds are immediately available.

The new psychiatry is also beginning to exert a deep influence on the administration of justice. For centuries the physician was the scientific adviser to the court. He had to determine the cause of death and the circumstances under which it occurred. His was the whole wide field of forensic medicine, which has a long history and which was frequently connected academically with public health. Today the physician is becoming, in an increasing measure, also the psychological adviser to the court. If an individual has become asocial and has committed an offence, we no longer wish to take vengeance on him or to punish him. We want to know why he became asocial and to reintegrate him into society as a useful and happy member of it. To that end we need a painstaking case history which will take all physical, mental, and social factors into consideration. The court needs the advice of the psychiatrist more than ever before for taking the case history and also for determining the cure. In this particular field, medicine has greatly contributed or rather is beginning to contribute in an increasing measure to the progress of civilization.

This leads us into the field of *sociology*, from which medicine has received much information but to which it is contributing more and more as it develops into a social science. Looking into the future, we must admit that healing will no longer be the main task of the physician, although still a very important one. Medicine must by necessity become preventive medicine. There is no point in letting people break down and suffer from preventable diseases. There are enough sources of suffering in the world that may not be prevented so easily. The major tasks of

medicine will be the maintenance and promotion of health, the prevention of disease, healing when prevention has broken down, and finally the social rehabilitation or reintegration of the former patient into society. The doctor's place will no longer be in his office where he would sit waiting for patients, it will be in the factory, the mine, the farm, the ship, wherever people convene for work. His headquarters will be the health center. Such a program obviously requires the close cooperation of the physician with educators, physical culturists, social workers, administrators and statesmen. The relation between medicine and sociology will be a very close one.

History, the picture we carry in us of our past and one which largely determines our actions, is undoubtedly an important aspect of civilization and I think that in our own field the history of medicine has given us a fuller and more correct picture of the past. The time is not so far past when history was merely political history, the story of dynastic quarrels of wars and treaties of peace. It was a great step forward when historians became interested in economic and social history. For a long time they still disregarded the impact of science on the development of civilization or at least did not pay sufficient attention to it. It is impossible to write economic history without considering technological changes but science as the driving force of technology was not sufficiently acknowledged. This has changed today. Nobody could write the history of the seventeenth century and be taken seriously unless he mentioned Newton. Our contribution has been to point out the significance of health and disease in a given society to show for instance what the prevalence of malaria or hookworm meant to the population of a country at a given time. Medical history has shown that medical literature is literature and that we should have a very incomplete picture of the civilization of Greece in the fifth century B.C. if we disregarded the Hippocratic writings. We have shown what a profound influence was exerted on the society of the period by the great epidemics of the Middle Ages—leprosy, plague, dancing mania, flagellantism, ergotism and so many others and in the Renaissance syphilis. We should have a very one-sided notion of Leonardo da Vinci if we studied him as an artist only and disregarded his anatomical and other scientific works. The impact of the Industrial Revolution on economic and social life is well known but medical history was able to point out how it affected the people's health and what new medical problems it created. We were also able to demonstrate that medical books, journals, reports, and case histories are sometimes extremely

valuable sources for the social history of a region. The physician who treated slaves on a plantation had no ax to grind. He simply made note of what he saw and did. Thus the history of medicine has undoubtedly contributed to a deeper understanding of historical development.

Finally, I would like to mention that many physicians have made important contributions outside their own medical field. A French physician, Théophraste Renaudot, in 1630 founded a labor exchange office, and in 1631 the first newspaper, the *Gazette de France*. Guy Patin became famous not for his medical work but for his sarcastic *Lettres* published after his death and reprinted repeatedly. Some of our best contemporary novelists, men like Duhamel, Luc Durtain, Gottfried Benn, are physicians, and their medical experience, physical and psychological, is reflected in their work. Many physicians were social reformers. Auguste Forel took up the fight against alcoholism and the drinking habits that stultify entire social groups at a time when such a fight was unpopular and required much courage. With the same enthusiasm he fought against sexual taboos and for a normal healthy sex life. He gave peace of mind to many young people who were afraid of the imaginary consequences of masturbation that the windbag S. A. Tissot had pictured in the eighteenth century in a book which unfortunately is still reprinted today and sold under the counter.

I wish to remind you that the great pathologist Rudolf Virchow was throughout his life, but particularly in his younger years, a very active social reformer and statesman. He took part in the revolutionary movement of 1848, and, although his journal *Die Medizinische Reform* was short-lived, it nevertheless paved the way for important medical reforms that were carried out a few decades later. It was Virchow who coined the sentence, "The physicians are the natural attorneys of the poor, and social problems fall to a large extent within their jurisdiction." They should know social conditions best, as their profession takes them into the homes of all social classes, and it is their duty to work for the improvement of conditions. It is the duty of all of us, as we practice not only psychosomatic but also social medicine, and as we are citizens of democratic countries who have a great responsibility toward the community.

The World Health Organization in the preamble to its constitution defined health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." It postulated furthermore that "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without

distinction of race, religion, political belief, economic or social condition." And the acceptance of these principles by all member nations is a very great contribution of medicine to the progress of civilization.

INDEX

- Academy of Sciences of New Orleans, 172
- Ackerknecht, Erwin H., 123, 137, 179
- Adler, 377
- Aesculape*, monthly journal on history of medicine, 79
- Agramonte, 344
- Agriculture, Department of, 182
- Airplane in rural medical service, 239 240
- Ajanta, 276
- Alexander, King of Yugoslavia, 100
- Alexander the Great, 346
- Ambulance service in Saskatchewan, 212
- America, colonial, hospitals in, 164, 166
 - medical conditions in, 161, 163 166
 - medical education in, 164
 - medical licensure in, 164 165
 - medical practice in, 316 317
 - medical societies in, 165
- American Association of History of Medicine, 79
- American Clinical and Climatological Association, 255
- American College of Surgeons, 326
- American Congress of Physical Therapy, 251 252, 255
- American Dental Association, 63
- American Foundation, 39
- American Medical Association, code of ethics, 50 51
 - committee on health resorts, 252
 - committee on public hygiene, 171, 173
 - on compulsory health insurance, 193
 - founding of, 167
 - on indigent sick, 47
 - mentioned, 308, 326
 - prosecution under antitrust law, 195
 - on sanitary reform, 172 173
 - studies of medical care, 63
 - on supply of medical service, 41
 - on workmen's compensation, 189
- American Philosophical Society, 65, 353
- Ancient times, regulation of physicians in, 309 310
- Andhra medical college, India, 282
- Andry, Nicolas, 332
- Anesthesia, contribution of dentistry, 335
 - effect on surgery, 342
- Angleman, Sidney, 180
- Antisepsis and surgery, 342
- Antoninus Pius, 310
- Arabic world, international character of medicine in, 351 352
 - medical licensure in, 311
- Armstrong, Barbara Nachtrieb, 131
- Art, and dentistry, 329
 - and sickness, 371
- Asbford, 344
- Asiatic cholera, 356
- Askaniy, Professor, 301
- Atoka, King, 277, 322
- Association of American Physicians, 39
- Atlantic Charter, 119, 230

- Attitudes toward illness, in ancient Greece,
66
current, 20 22
of medical students, 26 27
in primitive societies, 65
in Russia, 147
in Semitic civilizations, 66
- Augustus, 310
- Austria, medical licensure in, 316
- Avesta, 309
- Avicenna, 352
- Ayurveda*, see *Indigenous medicine, in India*
- Babylonia, ancient, attitude toward illness,
14
regulation of physicians, 159
value of teeth, 17, 329
- Bach, 369
- Baglivi, Giorgio, 107 108, 162
memory celebrated, 107 108
- Bailey, Richard, 321
- Bálint Nagy, Stephen, 314
- Balneology, need for study in America, 255
in Russia, 151
- Banting, 237
- Bard, Samuel, 320 321
- Bartsch, Georg, 332
- Bartok, 369
- Barton, Edward Hall, 171 172
- Baruch, Bernard M., donation for physical
medicine, 253
survey of Saratoga springs, 249
- Baruch, Simon, 250
- Batut, Milan Jovanović, 99
- Bayne Jones, 28
- Beaumont, 167, 344
- Bebel, 125, 126
- Beeson, Nora Sigerist, xiii
- Bekhterev, 376
- Belgrade, Yugoslavia, 98
- Behč, Alexander, 98
- Bell, A. N., 255
- Bell, John, 255
- Bellevue Hospital, history of, 319 320
- Bellini, 161
- Benn, Gottfried, 379
- Berkeley Springs, W. Va., 249
- Bernard, Claude, 376
- Bernoulli, the, 375
- Beveridge, Sir William, report on British
social services, 118, 119, 230
- Bhore, Sir Joseph, 273, 289
- Bhore committee, recommendations of, 293
295
- Billings, John, 286, 344
- Billroth, Theodor, 315
- Bismarck, Otto von, accomplishments, 134-
135
attempts to destroy Social Democratic
Party, 135
favored corporative state, 133
in German social insurance movement,
120 138, 232
mentioned, 185
resignation of, 134
- Black Death, 338
- Bleuler, 377
- Blockley in Philadelphia, 325
- Bloomington Asylum, 321
- Board of Health, New Orleans, 171
- Boerhaave, 80
- Borčić, Berislav, 114 115
- Borelli, 161
- Bowman, Karl, 288
- Boyle, 161
- Brentano, Lugo, 121
- Brettonneau, 300
- British Medical Association, 78
- Britton W. Earl, 180
- Brookings Institution, 59
- Brunfel, 374
- Brunschwig Hieronymus, 337
- Burdenko, N. N., 152
- Cabanès, 343
- Cabot, Hugh, 196
- Caesar, Julius, 310
- Caliph al Muqtadir, 311
- Canada, health conditions, 233 234
Parliament, 229
- Cancer, in Saskatchewan, 218 219
in United States, 184
- Canezza, Alessandro, 107
- Cape Town, University of, 268
- Capitation payments, in England, 49
in health insurance, 237
- Capparoni, Pietro, 107
- Capper bill, proposed health insurance,
192 193

- Caraka, 276
 Carlisle, Robert J., 319 320
 Carroll, 344
 Castiglioni, Arturo, 92, 104
 Celli, A., 304
 Central health authorities under socialized medicine, 45
 Cepulic, Vladimir, 93
 Cézanne, 371
 Charcot, 376
 Charity, an unreliable institution, 31
 Charity Hospital, New Orleans, 170, 325
 Chile, health facilities, 265
 investment of insurance funds, 265
 obstruction from right, 266
 preventive medicine, 265
 rest for workers, 265
 social conditions, 263 264
 social insurance, 187, 264 265
 Chiropractors under health insurance, 245
 Christianity, appeal to poor, 370
 attitude toward illness, 6, 16 17, 67
 ethic of suffering, 17
 Chronic disease, increased importance of, 373
 in United States, 184
 Churchill, Winston, 232
 Cities in Middle Ages, 323
 Citizens' committees, in Saskatchewan, 214 215
 in socialized medicine, 44
 Civil war in Russia, 140
 Civilization, and importance of history of disease, 303
 medicine's contribution to, 369 380
 Clapp, Edwin R., 180
 Clinical Institute of Moscow District, 87
 College of Physicians and Surgeons, Canada, 212
 Colonial countries, difficulties in financing medical care, 59
 Colonialism, in India, 293
 related to imperialism, 370 371
 Columbia Presbyterian Center, 322
 Columbia University, physical medicine at, 253
 Committee on Costs of Medical Care, appointed in 1928, 31
 on collection of physicians' bills, 195
 composition and program, 62-63
 findings, 242
 mentioned, 346
 recommendations, 230 231
 reports, 41 43
 Committee on Research in Medical Economics, 63
 Community health association, *see Farmers' Union Cooperative Hospital Association*
 Compulsory health insurance, in Europe, 49
 in India, 294
 leads to socialized medicine, 50
 scope of, 236
 Comstock, Carl R., 254
 Connell, Rowena, 9
 Cook, James, 259
 Cooperative Commonwealth Federation, Saskatchewan, election platform, 209
 Cooperative health associations, experiments in United States, 192
 Cooperative movement in Germany, 126
 Copernicus, 375
 Corlieu, A., 313
 Corporative state favored by Bismarck, 133
 Corvisart, 334
 Corwin, E. H. L., 322
 Cost of dentistry, 336
 Cost of illness in New Orleans, 169 179
 in United States, 178, 184 185
 Cost of medical care, effect of medical progress, 31 42, 58
 in Kaiser plan, 242
 in United States, 242
 in Wagner Murray Dingell Bill, 243
 Craig, 344
 Creeds of Germany, Italy, France, 91
 Crook, James H., 255
 Cushing, Harry, 157
 Da Vinci, Leonardo, 331, 378
 Davis, Michael M., 63
 Death cost of, in New Orleans, 177
 Death rate, in England and Wales, 178
 in India, 277, -83
 in London, 170
 in Munich, 163 170
 in New Orleans, 176
 reductions in, 372
 in United States, 183

- Decentralization of Russian health services, 140 141
- De Chauliac, Guy, 331
- Defense mechanisms, 5
- Deichgraber, Karl, 310
- De la Hire, Gabriel Phillippe, 332
- De le Boe (Syivius), 161
- Dental education, American leadership in, 335
- Dental hygiene in catechism of health, 333 334
- Dentistry, in ancient times, 329
and anesthesia, 333
and art, 329
economic problems, 336
history of, 327 336
licensure, 332
in Middle Ages, 331
and other occupations, 332 333
progress in, 328 329, 334, 333
related to history of medicine, 328
in Renaissance period, 331 332
in Ross Loos group, 204 205
in Saskatchewan, 220, 225
significance of teeth, 329 330
social problems, 335
unsolved problems, 335 336
views of physicians on, 334
- De Saxe, Maréchal, 343
- Descartes, 161
- Diepgen Paul, 17, 92, 103, 107
cited, 17
- Dietrich, E., 254
- Dingell, 229, 231
- Disease, causes of, 4, 40
effects of, 11, 57
history in art, 301
importance in history, 303 306
paleopathological studies of, 301
reductions in, 55
war casualties of, 339
- Djordjević, Vladan, 99
- Drugs, international origins of, 358
- Dubrovnik, Yugoslavia 107 109
- Duhamel, 379
- Dunant, Henry, 343, 357
- Duration of illness, estimated by Shattuck, 176
- Durtain, Luc, 379
- Duties of man, 24
- Du Toit, Dr., 269
- Economic depression, effects on hospitals, 79
enactment of social insurance, 80
- Economic factors, effect on physician, 36 37
- Edelstein, Ludwig, 300, 310
- Educational standards, effect on health activities, 56
- Egypt, ancient, dentistry in, 330
modern, quarantine in, 356
- Ehrlich, 237
- Electrification in India, 292
- Elefanta, 276
- Empiricists in Alexandria, 303
- Employer's liability, attitude of German Liberals, 130
in Germany before Bismarck, 121
see also Industrial accident insurance, Workmen's compensation
- England, capitation payments to physicians, 49
medical licensure in, 314 315
reduction in death rates, 372
- English College of Surgeons, 78
- Epidemics, in Middle Ages, 378
in New Orleans 173
in seventeenth century Europe, 162
in war, 338 339
- Epidemiology, 299 307
- Epilepsy in Saskatchewan, 217
- Etruscans, 329
- Eugen Neumann, Karl, 18
- Euler, Leonard, 375
- Eustachius, 331
- Factory laws, 131
- Falk, I. S., 63 178, 189
- Falk, Leslie, xiii
- Family doctor 68
- Famines in war, 338
- Farmers' Union Cooperative Hospital Association, background of, 198
benefits 199
creation of Shadid, 197
dental charges, 200
dues, 199
extra charges, 200
government of, 199
hospital owned by, 199

- medical staff of, 201
- mentioned, 235
- principles of, 199
- success of, 201
- Fascist powers, nationalism of, 349
- Fauchard, Pierre, 332
- Faust, Bernard Christoph, 333 334
- Federal Emergency Relief Administration, 26
- Fee for service, in Chile, 265
 - in German sickness funds, 49
 - in health insurance, 237
 - requires bureaucracy, 194
- Fee splitting, in France, 79
- Fenner, E. D., 173
- Fitch, William E., 254
- Flexner, 237
- Forel, Auguste, 377, 379
- Forensic medicine, in medical education, 365
- Fracastoro, Girolamo, 331, 376 377
- Fragonard, 371
- France, fee splitting, 79
 - popular front government, 64
 - social insurance in, 79
 - supply of physicians, 78 79
 - waste in health insurance, 49
- Frederick, King of Prussia, 332 333
- Frederick II, of Hohenstaufen, 8, 312
- Frederick III, Emperor of Germany, 134
- Free choice of physician, limitations on, 51, 84, 194
- French Revolution, 83 84
- Freud, 377
- Freyer, Hans, 21
- Fuchs, 374
- Fuller, Samuel, 163
- Galen, 18, 352
- Gandhi, 295
- Garrison, Fielding H., 337
- General practitioner, assistance needed, 73
 - contact with health centers, 52
 - importance in medical history, 165-166
 - under socialized medicine, 44, 52
- Geography of disease, related to medical history, 306-307
 - studies in, 300
- George, Lloyd, 232
- German Medical Association, 133
- Germany, attempted assassination of emperor, 126
 - attitudes of aristocracy, 124
 - availability of capital, 124
 - Catholic Party, 125
 - compulsory health insurance, 49
 - Conservative Party, 124
 - industrial insurance bills, 128 133
 - insecurity of workers, 127
 - Kulturkampf*, 125
 - Liberal Party, 124 125, 129
 - medical licensure in, 315 316
 - movement for unification, 123 124
 - National Socialist, eugenic program, 64
 - romanticism in medicine, 79
 - slave labor, 339
 - sterilization, 218
 - old age and invalidity insurance, 133 134
 - physicians' attitudes toward social security, 136 137
 - physicians in Revolution of 1848, 123
 - physicians' organization, 138
 - sickness insurance, 130 132
 - Social Democratic Party, 125, 126-127, 129
 - social insurance, an election issue, 129
 - social legislation before Bismarck, 121-123
 - Socialists Act, 126 127
 - supply of physicians, 138
 - trade unions, 125 126
- Gessner, Conrad, 375
- Gessner, Johannes, 353
- Gilbert, William, 375
- Goethe, 4
- Gomou, Victor, 92 94, 100
- Gomou, Vionca, 92
- Goncourt brothers, 376
- Gorgas, 344
- Grant, J. B., 290
- Great Britain, supply of physicians, 138
- Greece, ancient, attitudes toward illness, 6, 66
 - dentistry in, 329-331
 - international character of medicine in, 351
 - medicine for upper class, 370
 - position of physician, 60-67, 80, 139, 310
 - position of sick, 15 16

- value of health, 15 16
 - Group medicine, in health insurance, 192, 238
 - in medical centers, 73
 - recommended, 230
 - in Russia, 149
 - in United States, 197 208
 - Guernica, 370
 - Guilds, in ancient Greece, 159
 - physicians outside of, 312
 - of surgeons, 311 312
 - Hacker, Louis M., 58
 - Haller, Albrecht von, 299, 353
 - Halsted, 285
 - Hammurabi, Code of, 159, 309, 329
 - Hance, General, 294
 - Harnack, A., 16
 - Hartmann, Hermann, 138
 - Hartmannbund*, 138
 - Hartung, E. F., 313
 - Harvey, William, 161, 375
 - Hawaiian Islands, leprosy in, 259 260
 - Health, definition of, 379 380
 - difficulty of defining, 26
 - as property, 69
 - social obligation, 7
 - value of, 61
 - Health centers, in Russia, 149 150
 - under socialized medicine, 43 44
 - in Yugoslavia, 101, 116 117
 - Health committees in Russia, 146
 - Health conditions, in advanced and undeveloped countries, 372 373
 - in Canada, 233 234
 - in New Orleans, 170 173
 - in seventeenth century, 161 164
 - in United States, 181-185
 - compared to Europe, 182 183
 - Health cooperatives in Yugoslavia, 109-110
 - Health education, in New Zealand, 263
 - in Russia, 146 147
 - in Saitatchewan, 272
 - under socialized medicine, 44
 - Health insurance, compared with state medicine, 241 242
 - economic effects on physicians, 194 195
 - exclusions in European systems, 49
 - in France, 49
 - in industrial countries, 71
 - in New Zealand, 186
 - required by modern states, 21
 - in South Africa, 271
 - Health League of Canada, 229
 - Health of Towns' Association, 174
 - Health resorts, *see* *Mineral springs, Spas and health resorts*
 - Helicopter in rural service, 238, 240
 - Henricopolis, Virginia, 164, 325
 - Hippocrates, 80, 159, 352
 - Hippocratic oath, 159, 310
 - Hiroshima, 370
 - Hirsch, August, 300, 307
 - History, study by medical students, 32-33
 - History of medicine, in American schools, 273
 - congress of, projected program for Berlin meeting, 105
 - at Rome, 369
 - scheduled for Berlin and Rome, 103-104
 - at various locations, 90
 - contributions to education, 234 285
 - correct picture of past, 373 379
 - defined, 281
 - importance of, 303 306
 - institute, in India, 281
 - at Johns Hopkins, 285 286
 - at Leipzig, 9, 273
 - poison of nationalism in, 357 358
 - purpose of studying, 268
 - society organized in Paris, 89
 - sources, 282 283
 - studies in South Africa, 268
 - in twentieth century, 300 301
 - and war, 337 346
- Hoffman, 375
- Home nursing care, 368
- Hospitals, in ancient Rome, 18, 322
 - as centers of medical practice, 123
 - Christian, 18
 - in colonial America, 164, 166, 319 321
 - effects of economic depression on, 79
 - effects of medical progress on, 325
 - effects of war on, 340-341
 - of Farmers' Union Cooperative, 199
 - history of, 319 326
 - in India, 291
 - in Middle Ages, 19, 323 324
 - in New York, 319 322

- in Renaissance period, 324
- in Ross Loos plan, 206
- in rural medical service, 239 240
- in Russia, 141, 150 151
- in Saskatchewan, 212 213, 215 216
- in South Africa, 270 272
- in United States, 181 182, 190 191, 322, 325 326
 - as welfare institutions, 323 324
 - in Yugoslavia, 99, 101
- Hôtel des Invalides, Paris, 345
- Hot Springs, Ark., 249
- Hours of work of physicians in Russia, 241
- Howard Association, 174
- Hugo, Victor, 376
- Huguenot University, South Africa, 268
- Huillard Bréholles, 313
- Hume, 344
- Hume, Edgar E., 337
- Hunkel, Ernest, 121
- Hunter, John, 333, 342, 344
- Hygiene, individual, 81
- Ideals, of education, 80, 360
 - hampered by economic necessity, 40-41
 - of medical education, 162
 - of medicine, 81, 360 361, 362
 - of physicians, 83
- Illness, causes of, in New Orleans, 171 172
 - incidence in Munich, 169
 - incidence in Yugoslavia, 97
 - and poverty, 57
 - unpredictable risk, 235
- Income, in advanced and undeveloped countries, 373
 - in United States, 58, 83, 181
- India, awakening of, 278 279
 - Bhore committee, 293 295
 - capital resources, 293
 - cultural heritage, 276
 - electrification, 292
 - foreign influences, 283
 - general education, 284 285
 - health conditions, 277, 288
 - health survey, 273, 289 290, 293 295
 - historical sources, 282 283
 - hospitals, 291
 - Indian Medical Service, 288 289
 - indigenous medicine, 275 276, 292
 - living conditions, 277
 - medical conditions, 290 292
 - medical education, 291
 - medical history, institute of, 274, 286 287
 - medical traditions, 276 277
 - nationalism, 276 277
 - political situation, 295
 - proposed medical college, 280 281, 294
 - public medical service, 279
 - rural medical service, 275, 280 281
 - supply of physicians, 275
- Indian services in Saskatchewan, 221
- Indigenous medicine, achievements evaluated, 283
 - in India, 274 280, 292
 - licensed in Bombay, 274
 - philosophy, 275 276
 - use of practitioners as auxiliaries, 279 280
- Indigent, medical care of, advocated by German physicians, 123
 - recommendations for, 191
- Industrial accident insurance, Bismarck's proposals for, 128 133
- Industrial hygiene services, in Saskatchewan, 223
- Industrial revolution, effects on society, 73
- Industrial society, changes in character of, 84 85
 - value of health in, 68
- Industrialization, effects on medical services, 187 188
 - and structure of society, 336
- Infant mortality, in Canada, 234
 - in India, 277, 288
 - in United States, 183
- Infectious diseases, prevention of, in Russia, 148
- Influenza epidemic of 1918, 19
- Innocent III, 324
- Insecurity under capitalism, 120
- Institute of Experimental Medicine, near Moscow, 88
- Institute of Family and Community Health, South Africa, 363
- International Congress of Healing Art in Antwerp, 89
- International Medical Week, in Montreux, Switzerland, 77
- Internat., number of, in United States, 37

- ertnership in various countries, 244 245
 aly, malaria in, 304
 tzenplitz, Count, 128
- ames I, King of England, 314
 enner, 353
 eremić, Risto, 99
 Jewish physicians, in history of organiza-
 tion of medicine, 104
 problem of licensure, 313
 Johns Hopkins University, course in medi-
 cal sociology, 35 36
 effects of economic depression, 79
 language requirements, 355
 mentioned, 243, 280, 285, 354
 social problems forum, 37
 Jones, James, 172
 Julius Rosenwald Fund, 63
 Jung, 377
 Justice, influence of psychiatry in, 377
- Kahili, Hawaii, leprosarium, 260
 Kaiser, Henry J., 242
 Kammer, S., 254
 Kark, S. L., 368
 Kelly, 285
 Keppler, Paul, 17
 Kisch, Guido, 313
 Koch, Robert, 364
 Kojić, Gavril, 109
 Konstantinović, B., 101, 109
 Kovačević, Djordje, 93
 Kraepelin, 377
 Krapina, Yugoslavia, 94
 Kut el Amara, 338
- Labor, Department of, 182
 Laboratory technicians in Saskatchewan,
 226 227
 Laennec, 80, 334
 Laidler, 268
 Laissez faire, doctrine of German Liberals,
 130 131
 in medical care, 60
 in New Orleans, 174
 Lamprecht, Rudolph, 93
 Languages, international, in medicine 351-
 354
 Larrey, 334
 Lasalle, 126
- Lazear, 344
 League of Nations, 357
 Leprosy, Chinese name for, 260
 dangers of isolation, 260
 in Hawaiian Islands, 259 260
 in medieval Europe, 259
 Lévy Bruhl, H., 13
 Library, medical, of United States Army,
 344
 Licensure, dental, 332
 medical, in America, 316 318
 in Arabia, 311
 in Austria, 316
 by clerical authorities, 313
 in colonial America, 164 165
 in England and Scotland, 314 315
 in Germany, 315 316
 history of, 308 318
 of indigenous practitioners, 274
 by medical colleges, 68
 in Middle Ages, 311 315
 in Prussia, 315 316
 under public control, 312 313
 in United States, 317 318, 354
- Lidice, 370
 Liebig, 343
 Liebknecht, 125, 126
 Life expectancy in India, 277
 Lister, 342
 Literacy in Yugoslavia and Russia, 96
 Literature, medical influence on, 376 377
 Loeffler, 300
 London, illness and mortality rates in, 61
 London College of Physicians, 78
 London Society of Pharmacists, 78
 Loos, H. Clifford, 202 208
 Louis XIV, King of France, 345
 Louisiana, Medical College of, 171
 Louisiana Medical Society, 171-172
- McDonald Donald, 289
 McDowell, 167
 Mackintosh, James M., vii x
 Madrid, Spain, history of medicine con-
 gress 90
 Madura, 276
 Malaria, ancient descriptions of, 301 302
 history of, 100
 in Italy, 304
 Manes, Alfred, 121

- Mann, Thomas, 371
 Maraño, Gregorio, 90
 Martí Ibáñez, Félix, xii
 Marx, Karl, 90, 126
 Massachusetts General Hospital, 166, 325, 342
 Materialism, philosophical, 88
 Maternal and child welfare, in Canada, 234
 in Russia, 141, 148
 in United States, 182 183
 Mather, Cotton, 163
 Matisse, 371
 Maximilian II, Emperor, 314
 Mayow, 161
 Medical care, organization of, 60, 192
 system in Middle Ages, 67
 Medical education, in academics, 162
 in colonial America, 164
 entrance requirements 363 364
 forensic medicine in, 365
 in India, 291
 length of, 367 368
 in Middle Ages, 160 161
 for preventive care, 243 244
 psychiatry in, 365
 public health in, 364-365
 recruitment of students, 364
 reform in England, 78
 reorganization of, 80
 in Russia, 145
 social medicine in, 362 363, 366 367
 in South Africa, 272
 in United States, 167
 in universities, 162
 use of vacation periods, 368
 in Yugoslavia, 92 93
 Medical equipment in United States, 41-42, 167 168
 Medical ethics, 29
 Medical facilities, supply in Russia, 144
 Medical industries in Russia, 145
 Medical personnel, in India, 291
 in Saskatchewan, 223 227
 Medical progress, in last century, 54 55
 and science, 361 362
 in United States, 79
 Medical research in Russia, 145, 152
 Medical schools, cost of construction, 224-225
 quality of publicly operated, 45
 in Saskatchewan, 224
 in United States, 181
 Medical social workers, 226
 Medical societies, in colonial America, 165
 fee insurance plans of, 192
 history of, 157 168
 international, 355
 medical service plans of, 235
 of Negro physicians, 348 349
 in New York State, 48
 oppose health cooperative, 198
 oppose Ross Loos group, 203
 oppose social insurance, 80
 in Rome, 160
 Medical students, number in United States, 37
 and social problems, 28 38
 strike in France, 78
 Medicine, as applied science, 77 78
 changes in character of, 85
 goals of, 277
 international character of, 350 354
 major tasks of, 377 378
 and nationalism, 350 351
 as social institution, 188 189
 as social science, 78
 and sociology, 377 378
 stages of development of, 269
 Medicine man, position of, 65 66
 Medico Chirurgical Society, District of Columbia 348
 Mehring, Franz, 125
 Mental hospitals, 217
 Mental hygiene services, 218
 Meštrović, 100, 108, 110, 117
 Metropolitan Life Insurance Company, 63
 Mexico financing medical care in, 59
 Meyer Steinig, T., 310, 341
 Middle Ages, dentistry in, 351
 international character of medicine in, 351
 medical licensure in, 308, 311 315
 physicians in, 67, 80, 160
 poor in, 120
 Miceli, Aldo, 92, 104
 Mikulicz, 342
 Milbank Memorial Fund, 23, 63, 102
 Miller, Genevieve, xlii, 79
 Mineral springs ownership of, 243 242
 at Saratoga, N. Y., 242 251

- Influence on courts, 377
 in medical education, 365
- Psychoanalysis, 20
- Psychology, contributions of physicians to, 376
- Public health services, changing tasks of, 361
 in health insurance program, 238
 international character of, 355 357
 in Saskatchewan, 221 223
 in United States, 189, 190
 and war, 343
 in Yugoslavia, 100 102
- Public medical services, an ideal solution, 192
 in South Africa, 271
- Public schools, health education in, 81
- Quality of medical care, economic barriers to, 52
 in health insurance, 194
 in hospitals, 52
- Quarantine, history of, 99, 356
- Quebec, 240
- Račić Pasić, Pava, 108
- Ragusa, Yugoslavia, 99, 108, 356
- Raha, K C K E, 289
- Raiffeisen, 126
- Ramazzini, Bernardo, 363
- Raphael, 369
- Red Cross, 343, 356 357
- Reddy, D V S, 282
- Reed, Walter, 237, 344
- Regionalization of services, 214
- Rehabilitation, in Russia, 72, 345
 in Saskatchewan, 220 221
 as task of physician, 71 72
 in war time, 345
- Religious views, effects on health attitudes, 56
- Remuneration of physicians, by capitation payments, 237
 in Chile, 265
 by fees for service, 237
 in New Zealand, 263
 in Russia, 240 241
 by salaries, 237, 246 247
- Renaissance, dentistry in, 331 332
 effect on medicine, 161, 374
 mentioned, 324, 352
- Renaudot, Theophraste, 379
- Resident physicians, number of, in United States, 37
- Rest and recreation, in Chile, 265
 in Russia, 87 88, 147
- Restoration of health as task of physician, 71
- Rhazes, 352
- Rhodes University, South Africa, 268
- Rhythm of life, 10 11
- Rights of man, 24
- Ring, Martha D., 63
- Rockefeller Foundation, 290
- Roemer, Milton I, xi xiii, 77, 345
- Roger, Norman King, 312
- Romans in Yugoslav medical history, 99
- Romanticism in Nazi medicine, 79
- Rome, ancient, hospitals in, 322, 340 341
 medicine for upper class, 370
 position of physicians in, 159 160, 310
- Roosevelt, Franklin D., 63, 180, 119, 189, 230
- Roosevelt, Isaac, 321
- Rorem, C Rufus, 63
- Ross, Donald E., 202 208
- Ross Loos medical group, benefits, 203 204
 dental care, 204 205
 dues, 203
 evaluation of, 206 208
 exclusions, 204
 extra charges, 204
 group practice at, 202 203
 hospital care in, 206
 location of clinics, 205 206
 medical staff, 205 206
 mentioned, 235
 opposition of medical societies to, 203
 organization of, 202
- Rossie, R., 10
- Rouault, 369
- Royal College of Physicians, London, 314
- Royal College of Physicians, Scotland, 314
- Royal College of Surgeons, Canada, 212
- Royal Society, London, 162
- Rural medical care, in health insurance, 238
 in India, 275
 in Russia, 49, 141, 150, 185
 in Saskatchewan, 213 214

- in South Africa, 269
- in various countries, 239
- Russia, beginnings of health work, 140
 - commissariat of health, 45, 143 146, 153
 - effectiveness of system, 64
 - first to establish socialized medicine 45
 - five year plans, 142 143
 - health budget, 142
 - health work, 139 153
 - medical centers, 149 151
 - medical conditions, 85 88
 - medical education, 145
 - medical industries, 145
 - medical reputation of, 354 355
 - prevention of disease, 147 149
 - private practice of medicine, 246
 - promotion of health, 146 147
 - public health services, 47
 - reconstruction, 140 142, 152 153
 - rehabilitation services 151
 - rural medical centers 150
 - scientific research, 145, 355
 - supply of medical facilities, 141 142, 261
 - trade unions, 148 149
 - typhus, 339
 - World War II, 139, 151 152
- Sakuntala, 276
- Salaried physicians, 246 247
- Salerno, medical faculty of, 312
- Samhucus, Johannes, 314
- Sanitary Commission of New Orleans, 172
- Sanitary reform, 172 173
- Santo Spirito Hospital, Rome, 324
- Santoro, 375
- Sarajevo, Yugoslavia, 102 105
- Saratoga springs, N.Y., 249 250
- Saskatchewan, ambulance service, 212
 - cancer services, 218 219
 - citizens' committees, 214 215
 - cost of construction of medical school, 224 225
 - cost of hospitalization, 216
 - dentistry, 220 225
 - Department of Public Health, 222
 - district health centers, 211 212
 - district hospitals, 212-213
 - epileptics, 217
 - geography, 210
 - health education services, 222
 - historical background, 210 211
 - hospitals, 215
 - Indian services, 221
 - industrial hygiene services, 223
 - laboratory technicians 226 227
 - medical personnel, 223 227
 - medical school, 224
 - medical social workers, 226
 - mental hospitals, 217
 - mental hygiene services, 218
 - municipal doctor system, 210
 - nurse midwives, 226
 - nurses, 225 226
 - nursing schools, 226
 - nutrition services, 223
 - old folks' homes, 216
 - physicians, 214, 223 224
 - physiotherapists, 227
 - provincial grants, 214
 - psychiatric personnel, 218
 - public health services, 221 223
 - recommendations summarized, 227 228
 - regionalization of services, 214
 - rehabilitation services, 220 221
 - rural health services, 211 214
 - sanitation services, 221 222
 - scholarships, 224 225
 - sterilization, 217 218
 - survey report, 209-228
 - transportation, 215
 - tuberculosis services, 217
 - university, 224 225
 - urban health services, 210
 - venereal disease, 219 220
- Saskatoon, University of, 224 225
- Savić, V., 117
- Scandinavian countries, 186
- Scheler, Max, 11, 17
- Schuchter, J. J., 375
- Schiller, 305
- Schneider, Herrmann, 14
- School health services in Russia, 47
- Schools as public health institutions, 70
- Schulze-Dehnsch, 126
- Schwalbe, J., 137
- Schweninger, 4
- Science, physicians' contributions to, 374-375
- Scientific medicine, effect of Renaissance on, 374

- influence on courts, 377
- in medical education, 365
- Psychoanalysis, 20
- Psychology, contributions of physicians to, 376
- Public health services, changing tasks of, 361
 - in health insurance program, 238
 - international character of, 355 357
 - in Saskatchewan, 221 223
 - in United States, 189, 190
 - and war, 343
 - in Yugoslavia, 100 102
- Public medical services, an ideal solution, 192
 - in South Africa, 271
- Public schools, health education in, 81
- Quality of medical care, economic barriers to 52
 - in health insurance, 194
 - in hospitals, 52
- Quarantine, history of, 99, 356
- Quebec, 240
- Raćić Pasić, Pava, 108
- Ragusa, Yugoslavia, 99, 108, 356
- Raha K C K E., 289
- Raiffeisen 126
- Ramazzini Bernardo, 363
- Raphael, 369
- Red Cross, 343, 356 357
- Reddy D V S 282
- Reed Walter, 237 344
- Regionalization of services 214
- Rehabilitation, in Russia, 72, 345
 - in Saskatchewan, 220 221
 - as task of physician, 71 72
 - in war time, 345
- Religious views, effects on health attitudes, 56
- Remuneration of physicians, by capitation payments 237
 - in Chile 265
 - by fees for service, 237
 - in New Zealand, 263
 - in Russia, 240 241
 - by salaries, 237, 246 247
- Renaissance, dentistry in, 351 352
 - effect on medicine, 161, 374
 - mentioned, 324, 352
- Renaudot, Theophrastus, 379
- Resident physicians, number of, in United States, 37
- Rest and recreation, in Chile, 265
 - in Russia, 87 88, 147
- Restoration of health as task of physician, 71
- Rhazes, 352
- Rhodes University, South Africa, 268
- Rhythm of life, 10 11
- Rights of man, 24
- Ring, Martha D., 63
- Rockefeller Foundation, 290
- Roemer, Milton I., xi xiii, 77, 345
- Roger, Norman King, 312
- Romans in Yugoslav medical history, 99
- Romanticism in Nazi medicine, 79
- Rome, ancient, hospitals in 322, 340 341
 - medicine for upper class, 370
 - position of physicians in 159 160, 310
- Roosevelt, Franklin D., 63, 180, 119, 189, 230
- Roosevelt, Isaac, 321
- Rorem, C Rufus, 63
- Ross, Donald E., 202 208
- Ross Loos medical group, benefits, 203 204
 - dental care 204 205
 - dues, 203
 - evaluation of, 206 208
 - exclusions, 204
 - extra charges 204
 - group practice at, 202 203
 - hospital care in, 206
 - location of clinics, 205 206
 - medical staff, 205 206
 - mentioned, 235
 - opposition of medical societies to, 203
 - organization of 202
- Rossle, R 10
- Rouault, 369
- Royal College of Physicians, London, 314
- Royal College of Physicians Scotland 314
- Royal College of Surgeons Canada, 212
- Royal Society London, 162
- Rural medical care, in health insurance 238
 - in India 275
 - in Russia, 49 141, 150, 185
 - in Saskatchewan, 213 214

- in South Africa, 269
- in various countries, 239
- Russia, beginnings of health work, 140*
 - commissariat of health, 45, 143 146, 153
 - effectiveness of system, 64
 - first to establish socialized medicine, 45
 - five year plans, 142 143
 - health budget, 142
 - health work, 139 153
 - medical centers, 149 151
 - medical conditions, 85 88
 - medical education, 145
 - medical industries, 145
 - medical reputation of, 354 355
 - prevention of disease, 147-149
 - private practice of medicine, 246
 - promotion of health, 146 147
 - public health services, 47
 - reconstruction, 140 142, 152 153
 - rehabilitation services, 151
 - rural medical centers, 150
 - scientific research, 145, 355
 - supply of medical facilities, 141 142, 261
 - trade unions, 148 149
 - typhus, 339
 - World War II, 139, 151 152
- Sakuntala, 276*
- Salaried physicians 246 247*
- Salerno, medical faculty of, 312*
- Sambucus, Johannes, 314*
- Sanitary Commission of New Orleans, 172*
- Sanitary reform, 172 173*
- Santo Spirito Hospital, Rome, 324*
- Santoro, 375*
- Sarajevo, Yugoslavia, 102 105*
- Saratoga springs, N Y 249 250*
- Saskatchewan, ambulance service, 212*
 - cancer services, 218 219
 - citizens' committees, 214-215
 - cost of construction of medical school, 224-225
 - cost of hospitalization, 216
 - denursery, 220, 225
 - Department of Public Health, 222
 - district health centers, 211 212
 - district hospitals, 212 213
 - epileptics, 217
 - geography, 210
 - health education services, 222
 - historical background, 210 211
 - hospitals, 215
 - Indian services, 221
 - industrial hygiene services, 223
 - laboratory technicians, 226-227
 - medical personnel 223 227
 - medical school, 224
 - medical social workers, 226
 - mental hospitals, 217
 - mental hygiene services, 218
 - municipal doctor system, 210
 - nurse midwives, 226
 - nurses, 225 226
 - nursing schools, 226
 - nutrition services, 223
 - old folks' homes, 216
 - physicians, 214, 223 224
 - physiotherapists, 227
 - provincial grants, 214
 - psychiatric personnel, 218
 - public health services, 221 223
 - recommendations summarized, 227 228
 - regionalization of services, 214
 - rehabilitation services, 220 221
 - rural health services, 211 214
 - sanitation services, 221 222
 - scholarships, 224 225
 - sterilization, 217 218
 - survey report, 209-228
 - transportation, 215
 - tuberculosis services, 217
 - university, 224 225
 - urban health services, 21,
 - venereal disease, 219 220
- Saskatoon, University of, 224 225*
- Savić, V., 117*
- Scandinavian countries, 186*
- Scheler, Max, 11, 17*
- Scheuchzer, J. J., 375*
- Schiller, 305*
- Schneider, Herrmann, 14*
- School health services in Russia, 47*
- Schools as public health institutions, 70*
- Schulze-Delitzsch, 126*
- Schwalbe, J., 137*
- Schwenger, 4*
- Science, physicians' contributions to, 374-375*
- Scientific medicine, effect of Renaissance on, 374*

- effects of, on costs of care, 72-73
- foundations of, 278
- progress of, 274 275
- rise of, 373 375
- Scotland, medical licensure in, 314 315
- Scurvy, 338
- Secherov, 376
- Semashko, 112 113
- Semitic cultures and illness, 13 14, 66
- Seneca, 84
- Shadid, Michael A., congressional candidacy, 201 202
- early medical practice, 198
- foundation of Farmers' Union Cooperative Hospital Association, 198
- opposition of medical society to, 198
- youth and medical education, 197 198
- Shattuck, 176
- Sheps, Mindel C., 228
- Sherman Act prosecution, 195
- Sick person, exceptional position of, 9
- Sickness funds in Germany, 49, 122, 131
- Sickness insurance, Bismarck's proposals for, 130 133
- diversity of, in Germany, 132
- origins of, in Europe, 25
- Sigerist, Erica, xiii, 5 259
- Sigerist, Henry E., at American Medical Association congress, 308
- at American Philosophical Society, 65
- at anniversary of Missouri Dental College, St. Louis, 327
- at anniversary of New York municipal hospitals, 319
- in Hawaii, 259
- illness of, 248
- in India, 273, 288
- at International Congress of History of Medicine, 89 117, 369
- at International Medical Week, 77
- at Johns Hopkins Medical History Club, 169
- at Milbank dinner meeting, 23
- on National Health Bill, 180
- at New Haven County Medical Association, 157
- at New Haven medical students' conference, 28
- at Ottawa, Canada, 229
- in postwar planning, 118
- report on Saskatchewan health services, 209
- in Russia, 77, 139
- at Saratoga springs, 248
- in South Africa, 267 272
- in Switzerland, 39
- travel in United States, 197
- at University of Leipzig, 3, 9
- at Washington Academy of Medicine, 337
- at Washington society of Negro physicians, 348
- at Witwatersrand University, South Africa, 54
- at World Health Organization meeting, France, 360
- at Yale University, 39
- in Yugoslavia, 89 117
- Silver, George, xiii
- Simon Baruch Research Institute, 250
- Simonds, J. C., 170 179
- Sin'in ibn Thābit, 311
- Singer, Charles, 104
- Smallpox vaccination, in colonial America, 163
- in war time, 342 343, 353 354
- Smith, Edwin, 330
- Social insurance in Chile, 187
- in England, 232
- in Europe, 185 186 232
- exaggerated importance of, 82 83
- history of, 232
- reasons for, 188
- result of industrialization, 120
- in South America, 232
- in United States, 80
- in Yugoslavia, 105 107
- Social legislation, message of German emperor, 124 130
- Social medicine, chair at Oxford University, 244
- in medical education 360 368
- Social problems forum at Johns Hopkins University, 37
- physicians' understanding of, 193 194
- Social security, in Anglo Saxon countries, 230
- arguments of opponents to, 22
- for doctors, 51
- in Germany, 118 138
- in New Zealand, 186, 262 263

- in United States, 62, 190, 235
- after World War II, 118 120, 229 230
- Socialized medicine, central health authorities under, 45
- in Chile, 263 266
- citizens' committees under, 44
- economic security for doctors under, 51
- fears of physicians, 194 195
- financing of, 48
- follows compulsory health insurance, 50
- general practitioners under, 44
- health centers under, 43 44
- health education under, 44
- limitations on free choice of physician under, 51
- in New Zealand, 262 263
- objections to, 50 53
- postgraduate physicians' training under, 52
- quality of medical service, 52
- realities of, 180 196
- Russia established first, 45
- trends toward, 23 27
- in Yugoslavia, 102
- Society as environment, 6
- Society of Holy Spirit Hospitalers, 18
- Sociology, for medical students, 32, 35 36
- and medicine, 377 378
- research in medical, 36
- Sokhey, 295
- South Africa, European and non European groups, 64
- financing medical care, 59
- health insurance, 271
- hospitals in, 270-272
- problems of Europeans, 271
- problems of non Europeans, 270-271
- progress of medicine, 271 272
- public medical services, 271
- racial mixture, 269 270
- rural health conditions, 269
- universities 268
- urban conditions, 270
- South African Medical Association, 268
- Soviet Union, *see Russia*
- Spain, tensions in, 90
- Spas and health resorts, character of, 231
- classified, 251
- defined, 252
- effects of World War II, 252 253
- literature on 254 255
- need for American federation of, 255
- recommendations on, 251 252, 254 255
- research needs 254
- in Russia, 147
- teaching facilities, 254
- in United States, 248 255
- Spinoza, 305
- Split, Yugoslavia, 110
- Stalin, Joseph, 151
- Stalin automobile factory, Moscow, 87
- Stahl, 375
- Štampar, Andrija, comparison with Semashko, 111 112
- driven from office, 112
- early contacts with Sigerist, 111
- mentioned, 95, 101, 109, 183
- opposition from physicians, 112
- travels with Sigerist, 115
- work after dismissal, 113
- Yugoslav Director of Public Health 111-112
- Sterilization, 217 218
- Sternberg, mentioned, 344
- Sticker, George, 300
- Straschun, I. D., 77
- Sudetenland crisis, Chamberlain and Hitler, 110-111
- German claims, 107
- threats of war, 108 109
- Sudhoff, Karl, 105, 104, 273, 300, 324
- Sulfa drugs in India, 295
- Sumatra, 12 13
- Sumner, Charles, 348
- Superstitions, 97 98
- Surgeons, in craft guilds, 311 312
- as dentists, 331
- military, 314
- regulation in ancient times, 309
- Surgery, anesthesia in, 342
- classic operations, 342
- considered unsuitable for priests, 160
- in Middle Ages, 160-161
- stimulus from war, 340
- Sufruta, 256
- Sydenham, 80, 302
- Syme, 342
- Syphilis, change in character, 306
- considered as punishment, 19 20
- in hospitals, 324

- Talleyrand, 354
 Tata, 293
 Taylor, George R., 58
 Temkin, Owsei, xiii, 110
 Thaller, Lujo, 94, 100, 108
 Thatcher, Thomas, 163
 Theiler, Sir Arnold, 269
 Therapeutic medicine, period of, 81, 168
 Thiersch, 342
 Tissot, S. A., 379
 Tollet, C., 325
 Trade associations in German accident insurance, 133
 Trade unions, in Germany, 125 126
 in India, 294
 in Russia, 148 149
 Tropical medicine, 300
 Trousseau, A., 376
 Tuberculosis, in Canada, 233 234
 in Saskatchewan, 217
 in United States, 183
 Typhus, in eastern Europe, 339
 in war, 338 339
- Unani, *see* *Indigenous medicine, in India*
 Undeveloped countries, awakening in, 370
 Unemployment insurance, 191
 Ungnad, Arthur, 13
 Union of South Africa, *see* *South Africa*
 Union of Soviet Socialist Republics, *see* *Russia*
 United States, group health plans in, 197-208
 Influence of frontier on, 167
 medical care for indigent, 40 41
 medical conditions, 181 185
 medical equipment, 167 168
 medical licensure in, 317 318
 social conditions, 232
 number of physicians, 138
 see also *America, colonial*
 United States Army, medical corps, 344
 reductions in disease casualties, 372 373
 United States Public Health Service, clinic
 at Hot Springs, Ark., 249
 efficient administration in, 53
 leprosia in Hawaii, 260
 National Health Survey, 41, 63
 Universities, administration of, 287
 international character of, 352
 and medical licensure, 312 314
 in Middle Ages, 315
 national character of, 354
 Unrest, in medical world, 29, 77-78
 related to economic conditions, 82
- Vāgbhata, 276, 282
 Valéry, Paul, 369
 Value of health, 238
 Value of life in New Orleans, 176
 Van Beuren, John, 320
 Van Gogh, 305, 371
 Vendidad, 309
 Venereal disease, legislation on, 22
 in Saskatchewan, 219 220
 in United States, 183
 Verlane, 371
 Vesalius, Andreas, 331, 352, 375
 Veterans' hospitals at health resorts, 253
 Virchow, Rudolf, 300, 379
 silent in social insurance controversies, 137
 Volkmann, 342
 Voluntary health insurance, Blue Cross
 plans, 235
 in United States, 189, 192, 235 236
 weaknesses of, 236
 Voluntary health organizations in New Orleans, 174
 Von Miaskowsky, A., 128
 Von Poschinger, H., 121, 128
- Wage earners, preponderance of, in U.S. economy, 59
 Wages, loss of, due to illness, 191
 Wagner Robert, 180, 189 190, 229 231
 Wagner Murray Dingell bill, attacks on, 231
 chiropractors and osteopaths excluded, 245
 costs of program, 243
 introduced, 231
 Waller, Erik, 107 108
 Walton, George E., 255
 War, army surgeons in, 344
 contributions to social medicine, 346
 disease casualties in, 339
 effects of firearms on, 346
 effects on Soviet medicine, 139
 expansion of industry for, 339 340

- and humanitarianism, 343
- lessons to medicine, 344
- medical corps in, 344
- and medical science, 344
- negative contributions of, 337 346
- neutrality of medical personnel in, 358
- political aspects of, 346
- primitive method of politics, 345
- and public health, 343
- rehabilitation medicine in, 345
- savagery of, 370
- and smallpox vaccination, 342 343
- social effects of, 346 347
- stimulus to medicine, 340
- and surgery, 341 342
- wound casualties in, 339
- Warren, 342
- Watt, M H, 263
- Weizacker, 11
- Welch, William, 237, 285 286
- Welfare institutions, related to hospitals, 323, 324
- Westerhouse, William, 163
- Western Reserve University, 79
- Weyburn, Saskatchewan, 217
- Widmer, Charles, 11
- Wilbur, Ray Lyman, 253
- William I, Emperor of Germany, acceded to throne, 124
 - assassination attempts on, 126
 - death, 134
 - messages from throne, 129 130, 132
- William II, Emperor of Germany, 134
- Winslow, 373
- Winthrop, John Jr, 162, 163
- Wittels, Fritz, 20
- Witwatersrand University, South Africa, 268, 272
- Wolfe, Thomas, 36
- Woodville, 353 354
- Woodward, 344
- Work, effect of illness on obligation to, 21
 - necessity for, 7
- Workmen's compensation, public financing of medical care, 48
 - in United States, 61, 189
 - see also *Employer's liability, Industrial accident insurance*
- Works Progress Administration, 41
- World Health Organization, definition of health, 379 380
 - mentioned, 360, 376
 - objectives of, 357
- Yellow fever, 175
- Yugoslavia, agricultural conditions, 95
 - description, 91
 - economic depression, 95 96
 - health centers, 101, 116 117
 - health cooperatives, 109 110
 - history of medicine, 99
 - hospitals, 101
 - Institute for Mother and Child, 117
 - medical schools, 93
 - political antagonisms, 96 97
 - prevalence of disease, 97
 - public health administration, 100 102
 - site of History of Medicine Congress, 89 117
 - social and economic structure, 94-98
 - social services 185 186
 - socialized medicine, 102
 - superstitions, 97 98
 - supply of physicians, 101-102
 - vital statistics, 97
- Zagreb, Yugoslavia, School of Public Health, 114 115
- Zarnik, 94
- Zeller, 16
- Zemstvo medicine, 41, 49, 73
- Zeus, 5
- Zinsser, Hans, 339
- Zola, Émile, 371, 376

ABOUT THE AUTHOR

Henry E. Sigerist, M.D., considered by many to be the greatest medical historian of our time, if not all time, was born in Paris in 1891. At an early age he was attracted to the study of languages. By the time he was fifteen, he was well versed in French, German, English, and Italian and was familiar with Greek, Latin, and Arabic. Shortly thereafter, he expanded his studies to include Hebrew, Chinese, and Sanskrit. Dissatisfied with the limitations of philology, he turned to science, and finally to medicine, to receive his M.D. at Zurich in 1917.

In his own words, "I refused to specialize. My interests were very broad, and I drifted into a field where I could combine all my interests: medical, philological, historical, and sociological." Ultimately Dr. Sigerist did become a "specialist," in that he was one of the few dynamic medical historians of all time.

Dr. Sigerist emerged supreme in his field after refusing the advice of his colleagues, who called the history of medicine "a hobby for retired practitioners." From his study of history grew an original approach to medicine as a social science; his historical analyses were at the same time sociological. The medical world eventually came to accept many of his ideas and concepts and saw fit to award him many well-deserved honors, including the Sudhoff and Welch medals for outstanding achievement.

He held many important posts, including those of Professor of the History of Medicine at the University of Leipzig and Director of the Institute of the History of Medicine at the Johns Hopkins University. In 1947 upon giving up the post at Johns Hopkins, he was appointed Research Associate by Yale University, a position which he held in absentia after returning to Switzerland to write a multivolumed history of medicine. He also served as President of the American Association of the History of Medicine and as President of the History of Science Society.

To the disappointment of many, Dr. Sigerist succeeded in completing only two volumes of his projected eight volume history of medicine. Ill health and, finally, his untimely death on March 17, 1957, at the age of sixty five, ended his hope of the completion of this monumental task, as well as a contemplated four volume sociology of medicine.

Despite the fact that his greatest project remains unfinished, his many inspired writings remain as a living tribute to the life and work of a dedicated humanist and historian and a great man. As has been stated, "No one will again be able to write of medical history uninfluenced by Sigerist's ideas."

A NOTE ON THE TYPE AND DESIGN

The text of this book has been set in Linotype Baskerville, a revival of a type designed by John Baskerville, English type designer, in the last half of the eighteenth century. The chapter titles are set in Bulmer, a replica of the William Martin type, which was used by W. Bulmer & Co., Shakespeare Press, London, in the late eighteenth century. The initial letter of each chapter is Kennerley Openside, which was designed by Frederic W. Gaudy.

This book was composed, printed, and bound by American Book-Stratford Press, Inc., New York City. The typography, binding, and jacket designs are by Ted Bergman.